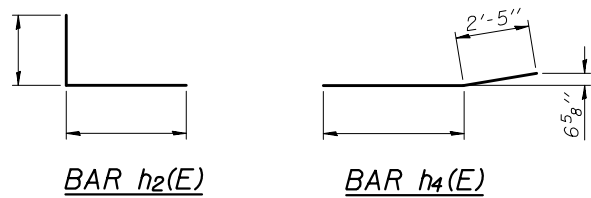


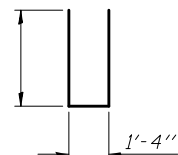
CELL / MODEL NAME	DESCRIPTION	DATE
A-1	Pile stub abutment no skew	7/1/2010
A-1-D	Pile stub abutment details	1/27/2012
A-1-DSD	Pile stub abutment details with drilled shafts	1/27/2012
A-1-L (greater than 30 degree skew)	Pile stub abutment ahead left (> 30 degree skew)	1/27/2012
A-1-L (less than 30 degree skew)	Pile stub abutment ahead left (< 30 degree skew)	7/1/2010
A-1-R (greater than 30 degree skew)	Pile stub abutment ahead right (> 30 degree skew)	1/27/2012
A-1-R (less than 30 degree skew)	Pile stub abutment ahead right (< 30 degree skew)	7/1/2010
AD-11-0	Abutments for 11 inch deck beams, no skew	7/1/2010
AD-11-L	Abutments for 11 inch deck beams, ahead left skew	7/1/2010
AD-11-R	Abutments for 11 inch deck beams, ahead right skew	7/1/2010
AD-1721-0	Abutments for 17" or 21" deck beams, no skew	7/1/2010
AD-1721-L	Abutments for 17" or 21" deck beams, ahead left skew	7/1/2010
AD-1721-R	Abutments for 17" or 21" deck beams, ahead right skew	7/1/2010
AD-2742-0	Abutments for 27", 33", or 42" deck beams, no skew	7/1/2010
AD-2742-L	Abutments for 27", 33" or 42" deck beams, ahead left skew	7/1/2010
AD-2742-R	Abutments for 27", 33", or 42" deck beams, ahead right skew	7/1/2010
AI-2440-0	Integral abutment; 24-40 inch depth beams; No skew	8/31/2012
AI-2440-L	Integral abutment; 24-40 inch depth beams; Left skew	8/31/2012
AI-2440-R	Integral abutment; 24-40 inch depth beams; Right skew	8/31/2012
AI-2440S-0	Integral abutment; 24-40 inch depth beams; Spiral; No skew	8/31/2012
AI-2440S-L	Integral abutment; 24-40 inch depth beams; Spiral; Left skew	8/31/2012
AI-2440S-R	Integral abutment; 24-40 inch depth beams; Spiral; Right skew	8/31/2012
AI-greater than 40-0	Integral abutment; Greater than 40 inch depth beams; No skew	8/31/2012
AI-greater than 40-L	Integral abutment; Greater than 40 inch depth beams; Left skew	8/31/2012
AI-greater than 40-R	Integral abutment; Greater than 40 inch depth beams; Right skew	8/31/2012
AI-greater than 40S-0	Integral abutment; Greater than 40 inch depth beams; Spiral; No skew	8/31/2012
AI-greater than 40S-L	Integral abutment; Greater than 40 inch depth beams; Spiral; Left skew	8/31/2012
AI-greater than 40S-R	Integral abutment; Greater than 40 inch depth beams; Spiral; Right skew	8/31/2012
AIS-0	Integral abutment; Slab bridge; No skew	8/31/2012
AIS-L	Integral abutment; Slab bridge; Left skew	8/31/2012
AIS-R	Integral abutment; Slab bridge; Right skew	8/31/2012
AV-I-0	Vaulted abutment no skew with PPC I beams	7/1/2010
AV-I-L	Vaulted abutment ahead left with PPC I beams	7/1/2010
AV-I-R	Vaulted abutment ahead right with PPC I beams	7/1/2010
AV-IW-0	Vaulted abutment no skew with PPC I beams	7/1/2010
AV-IW-LR	Vaulted abutment skewed with PPC I beams	7/1/2010

CELL / MODEL NAME	DESCRIPTION	DATE
AV-S-0 (1 of 2)	Vaulted abutment no skew sand filled	7/1/2010
AV-S-0 (2 of 2)	Vaulted abutment no skew sand filled	7/1/2010
AV-S-L (1 of 2)	Vaulted abutment ahead left sand filled	7/1/2010
AV-S-L (2 of 2)	Vaulted abutment ahead left sand filled	7/1/2010
AV-S-R (1 of 2)	Vaulted abutment ahead right sand filled	7/1/2010
AV-S-R (2 of 2)	Vaulted abutment ahead right sand filled	7/1/2010
F-HP	Steel H piles	1/27/2012
F-MS	Metal shell piles	1/27/2012
F-PC	Precast piles	7/1/2010
P-1	Solid straight stem pier	7/1/2010
P-2	Single hammerhead pier	7/1/2010
P-3	Double hammerhead pier	7/1/2010
P-4	Double hammerhead pier (alternate)	7/1/2010
P-5	Three column pier	7/1/2010
P-6	Multiple column pier	7/1/2010
P-7	Trapezoidal pier	7/1/2010
P-10	Single hammerhead pier (modified)	7/1/2010
P-11	Two column trapezoidal pier	7/1/2010
P-12	Three column trapezoidal pier	7/1/2010
P-13	Four column trapezoidal pier	7/1/2010
P-14	Five column trapezoidal pier	7/1/2010
P-24	Four column pier (over railroad)	7/1/2010
P-26	Six column pier (over railroad)	7/1/2010
P-DS	Drilled shaft pier	7/1/2010
P-DSCW	Drilled shaft pier with crashwall	7/1/2010
P-DSSW	Drilled shaft pier (solid)	11/26/2012
P-DSTB	Drilled shaft pier with transfer beam	7/1/2010
P-DSWW	Drilled shaft pier with webwall	11/26/2012
PB-1	Solid battered stem pier	7/1/2010
PC-1	Solid straight stem pier with cap	7/1/2010

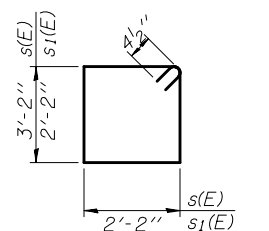


BAR $h_4(E)$

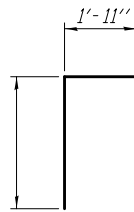
-pairs #5 $h_2(E)$
bars Ea. End



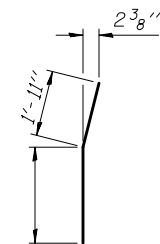
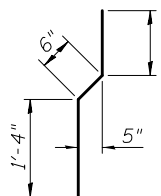
BAR $n_1(E)$



BAR $u(E)$

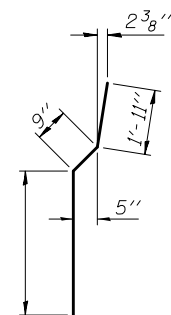


BAR $v_1(E)$



BAR $v_1(E)$

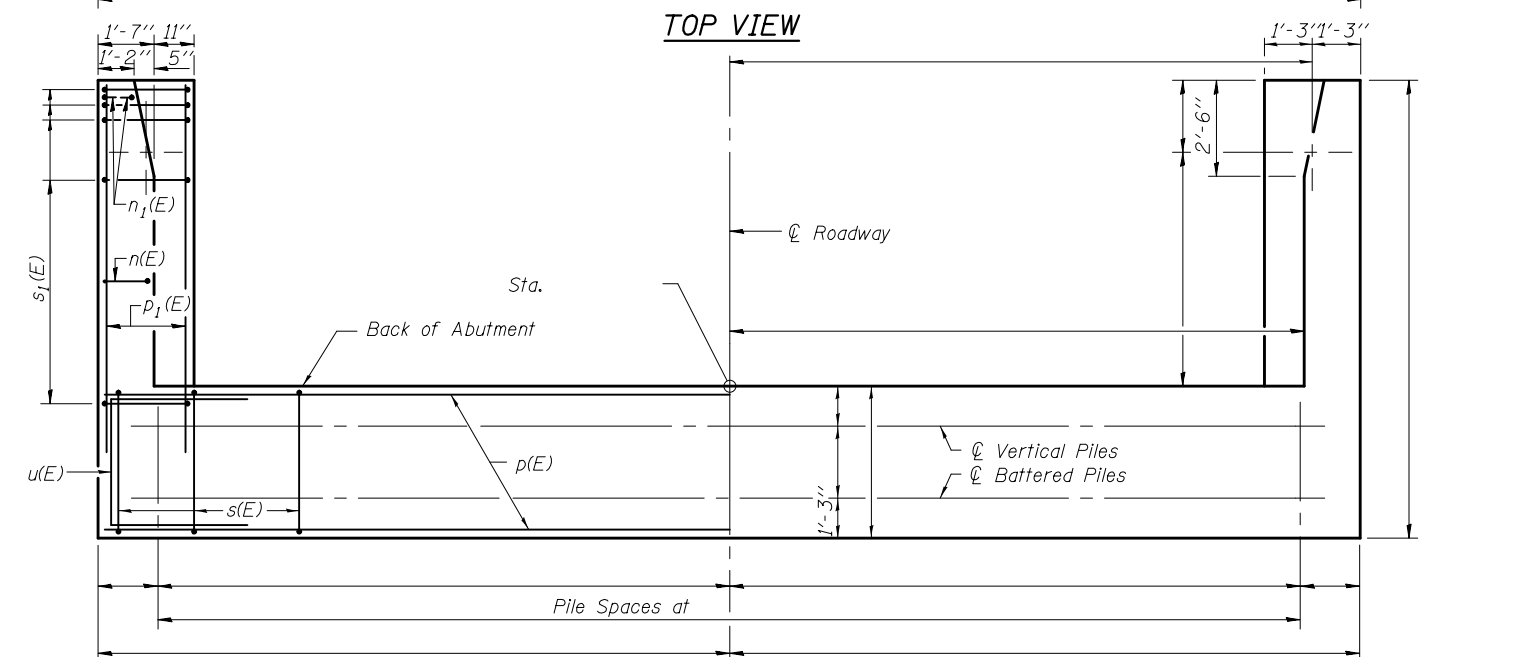
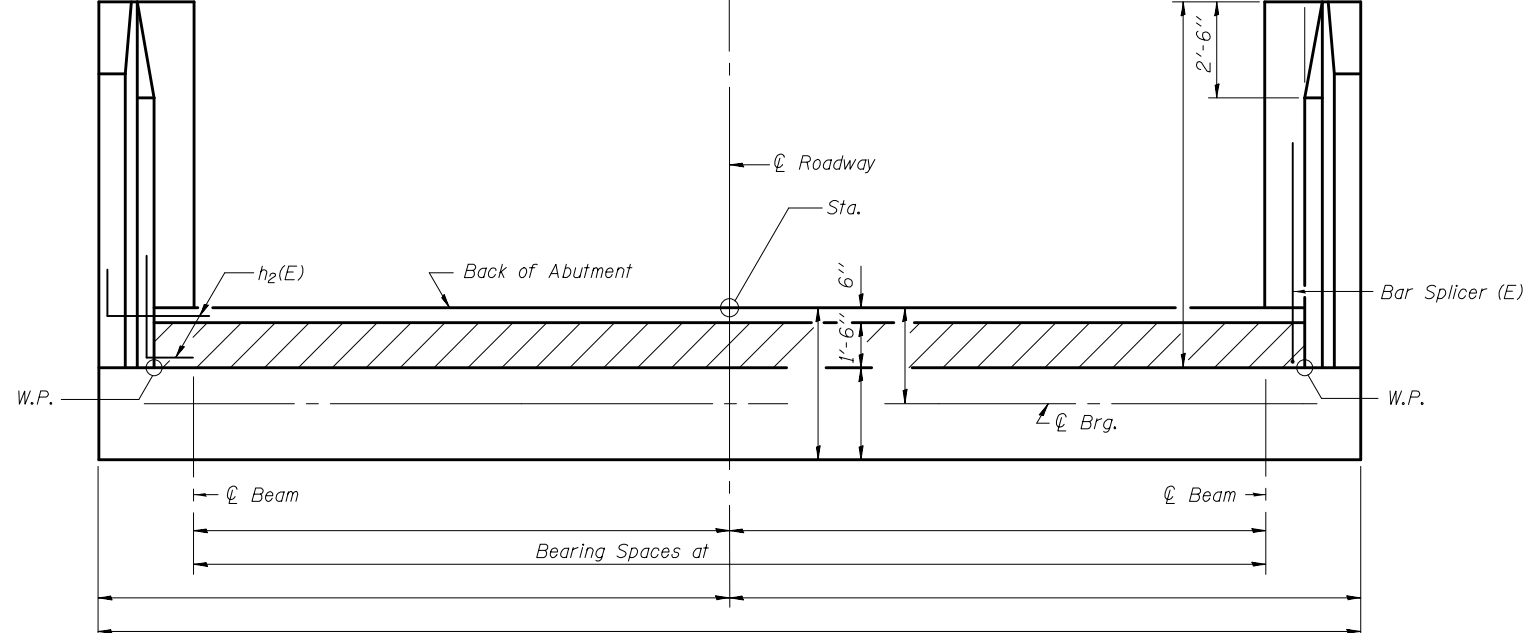
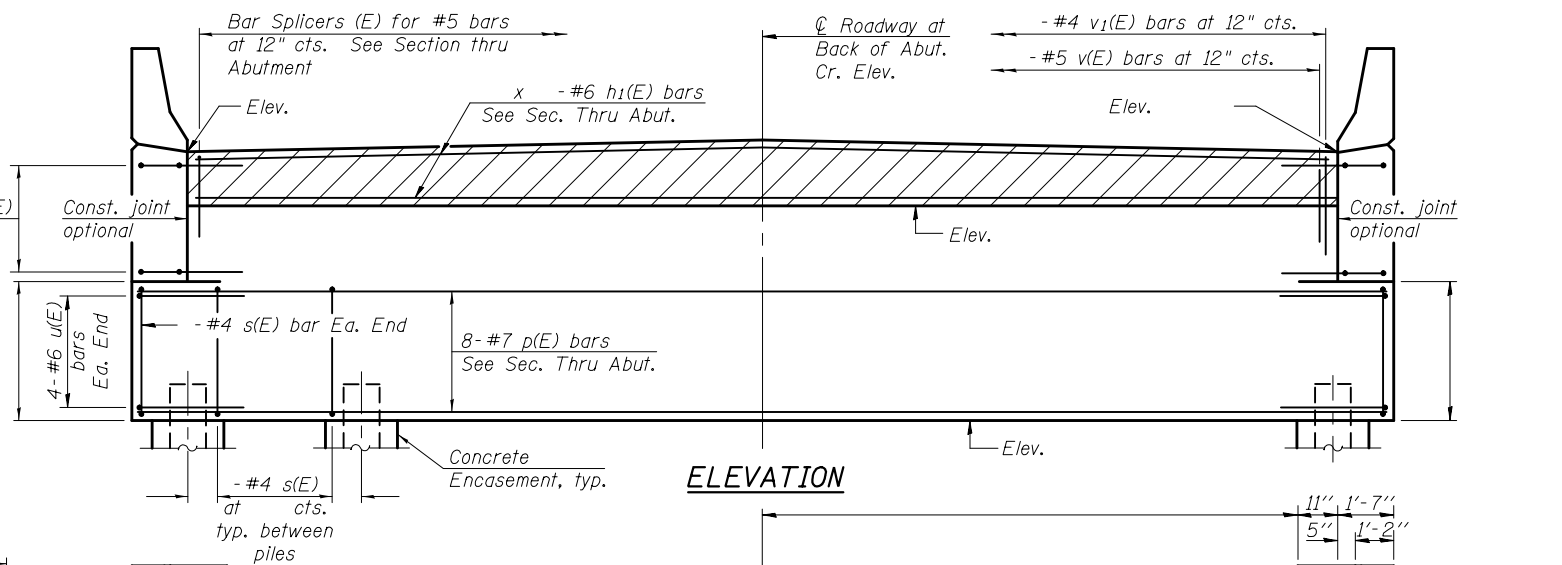
BAR $v_3(E)$



BAR $v_4(E)$

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



ABUTMENT BILL OF MATERIAL

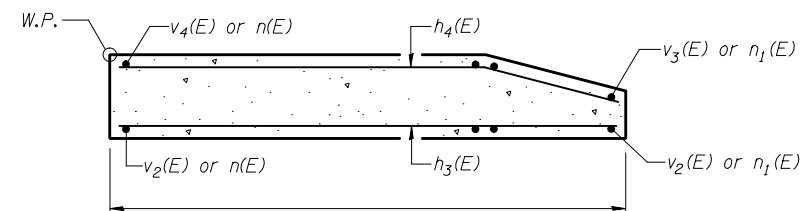
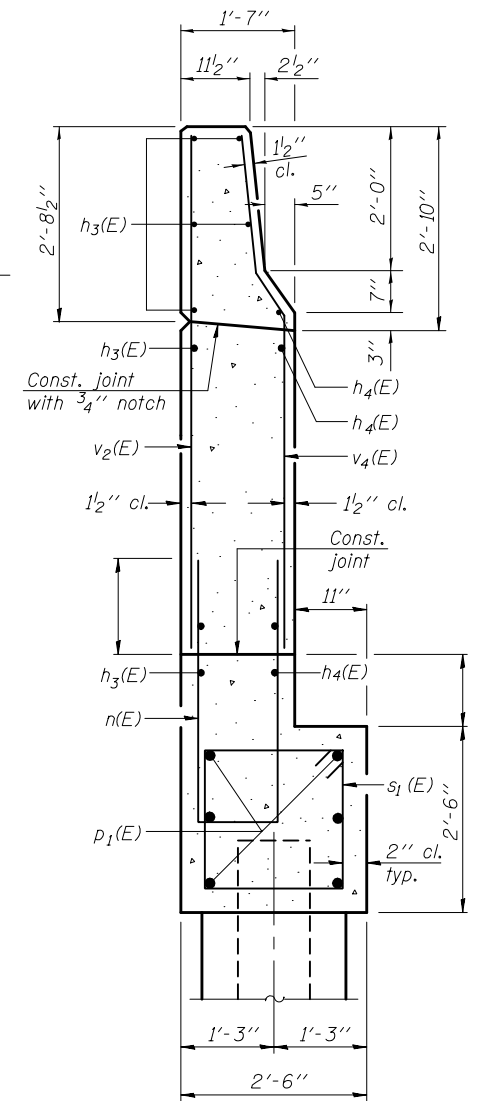
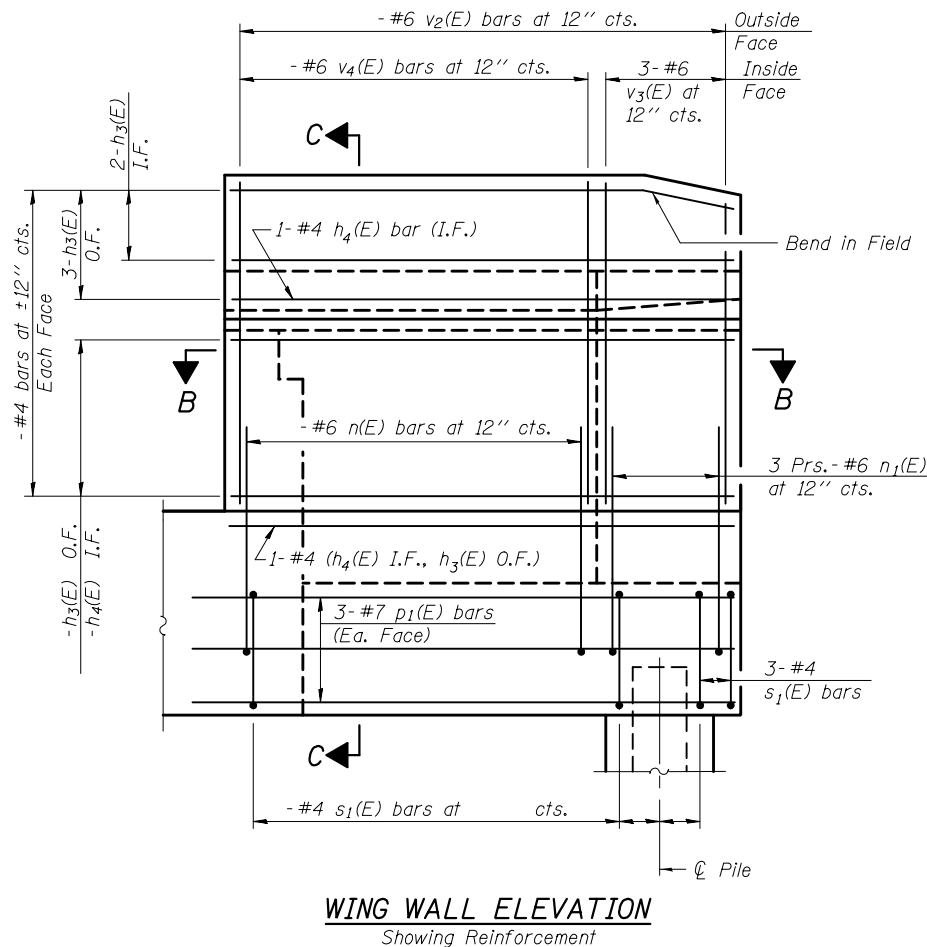
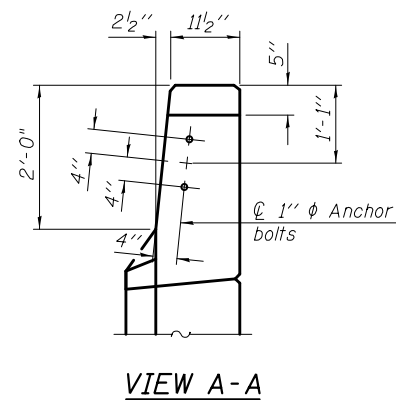
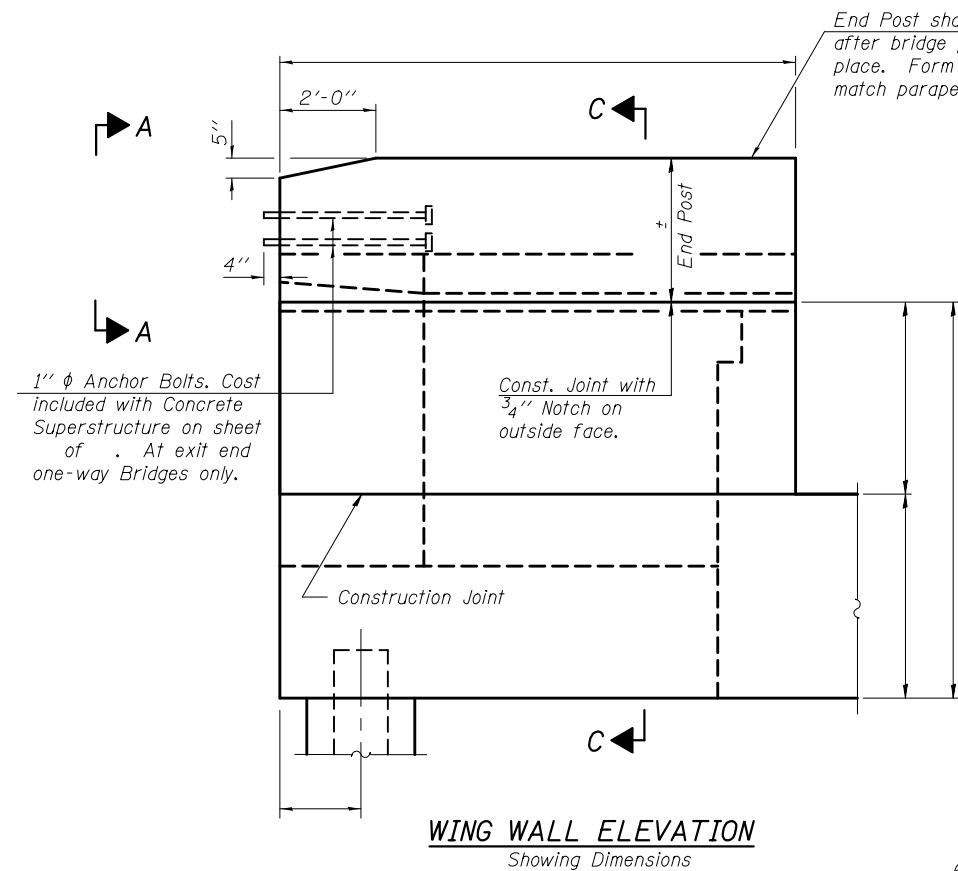
Bar	No.	Size	Length	Shape
$h(E)$		#5		
$h_1(E)$		#6		
$h_2(E)$		#5		
$h_3(E)$		#4		
$h_4(E)$		#4		
$n(E)$		#6		
$n_1(E)$		#6		
$p(E)$		#7		
$p_1(E)$		#7		
$s(E)$		#4		
$s_1(E)$		#4		
$u(E)$		#6		
$v(E)$		#5		
$v_1(E)$		#4		
$v_2(E)$		#6		
$v_3(E)$		#6		
$v_4(E)$		#6		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	
Concrete Sealer			Sq. Ft.	

For details of Bar Splicers, see sheet - of -.
For details of piles and Concrete Encasement,
see sheet - of -.

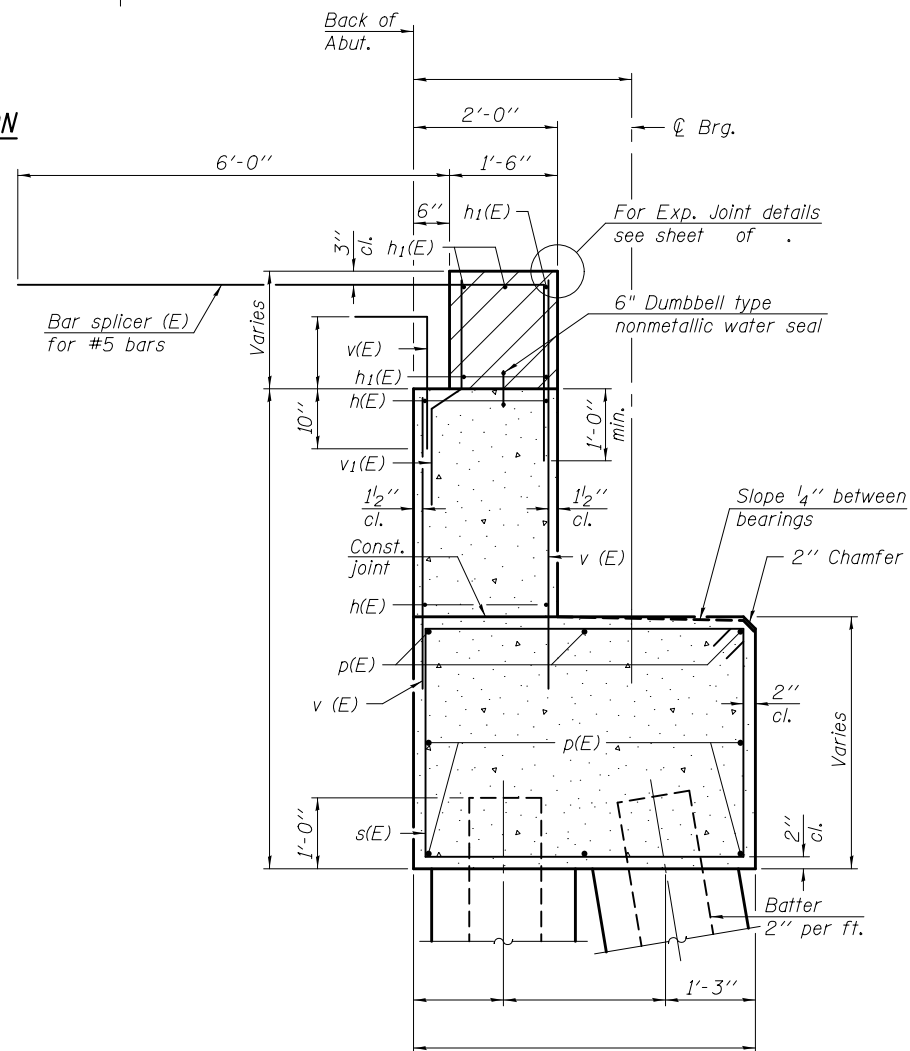
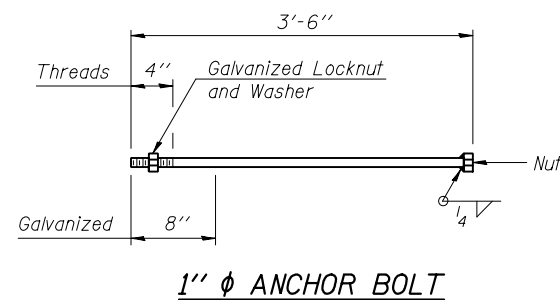
A-1

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
							CONTRACT NO.			
						ILLINOIS FED. AID PROJECT				



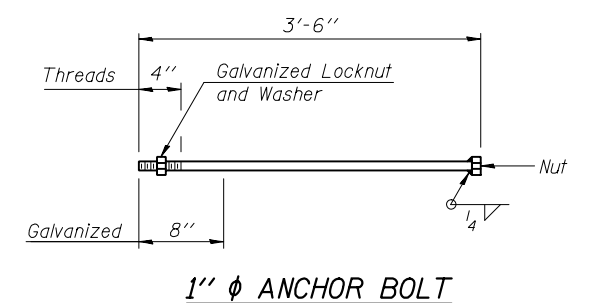
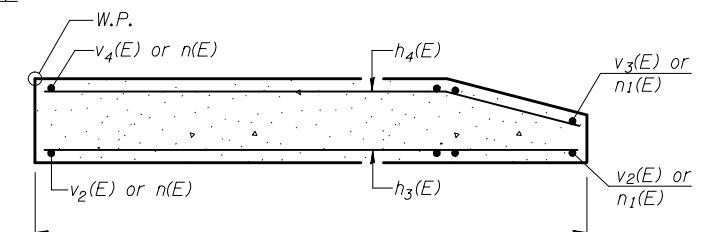
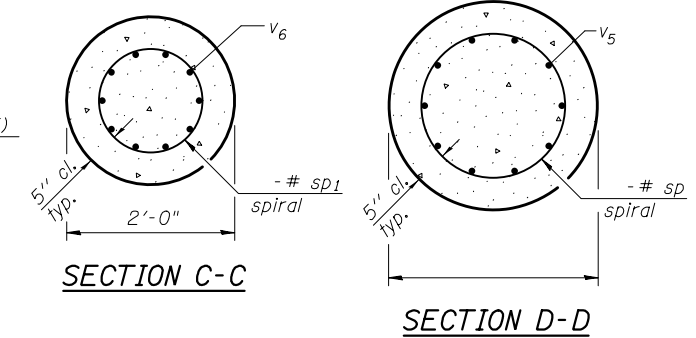
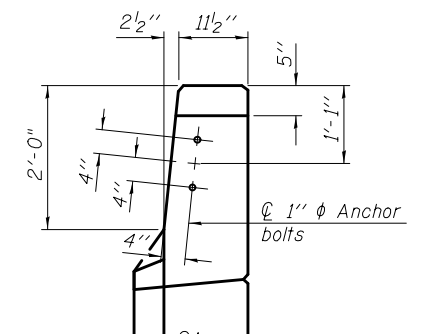
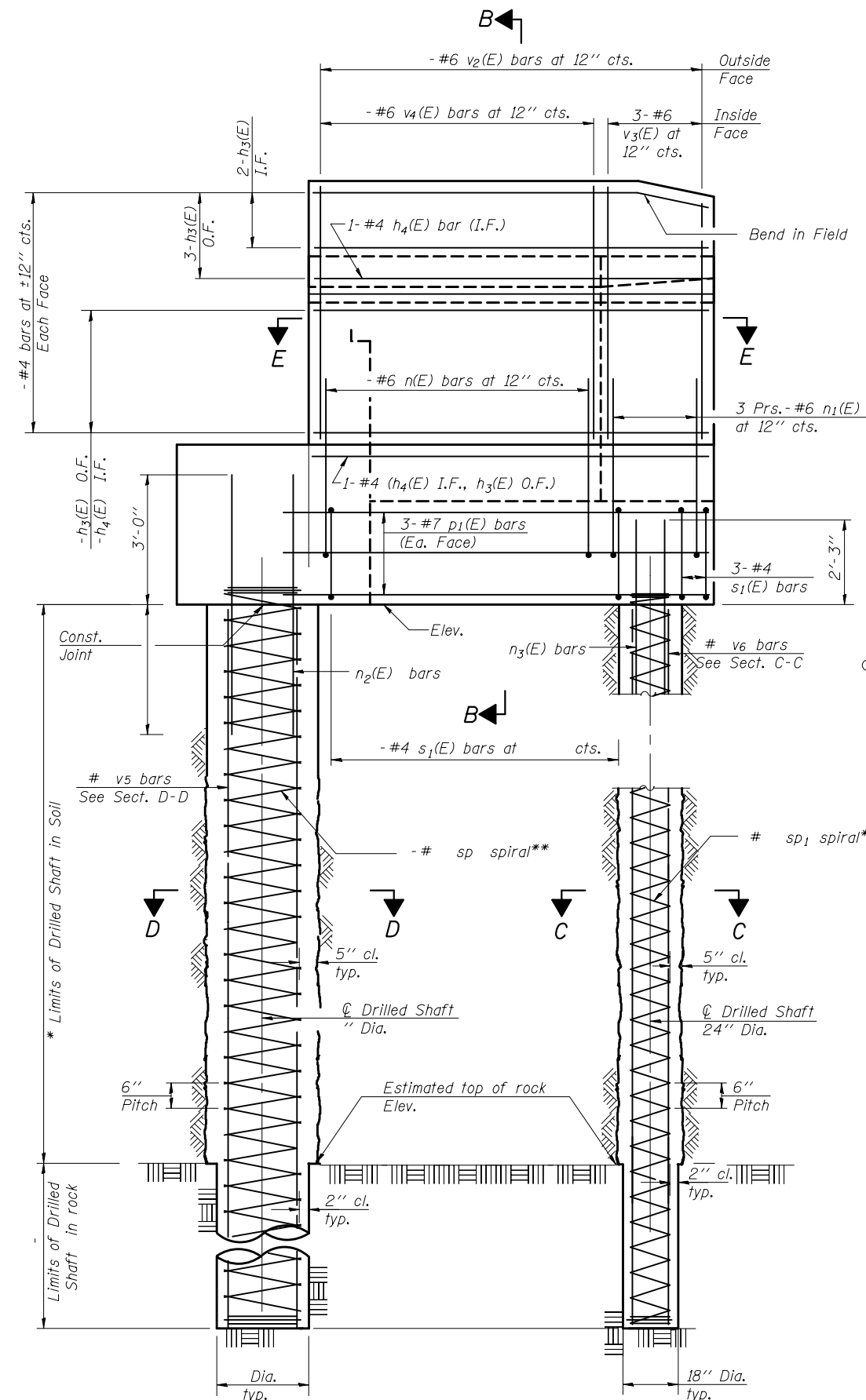
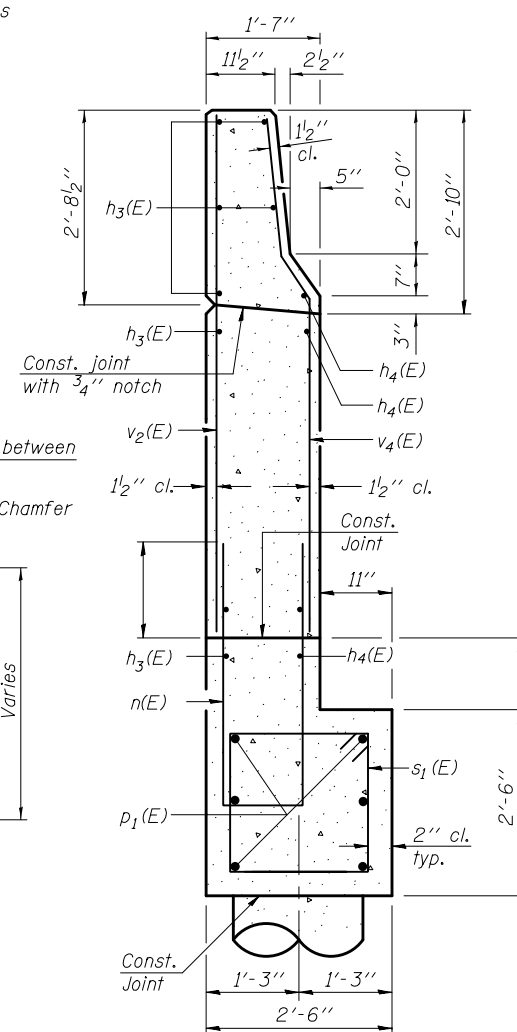
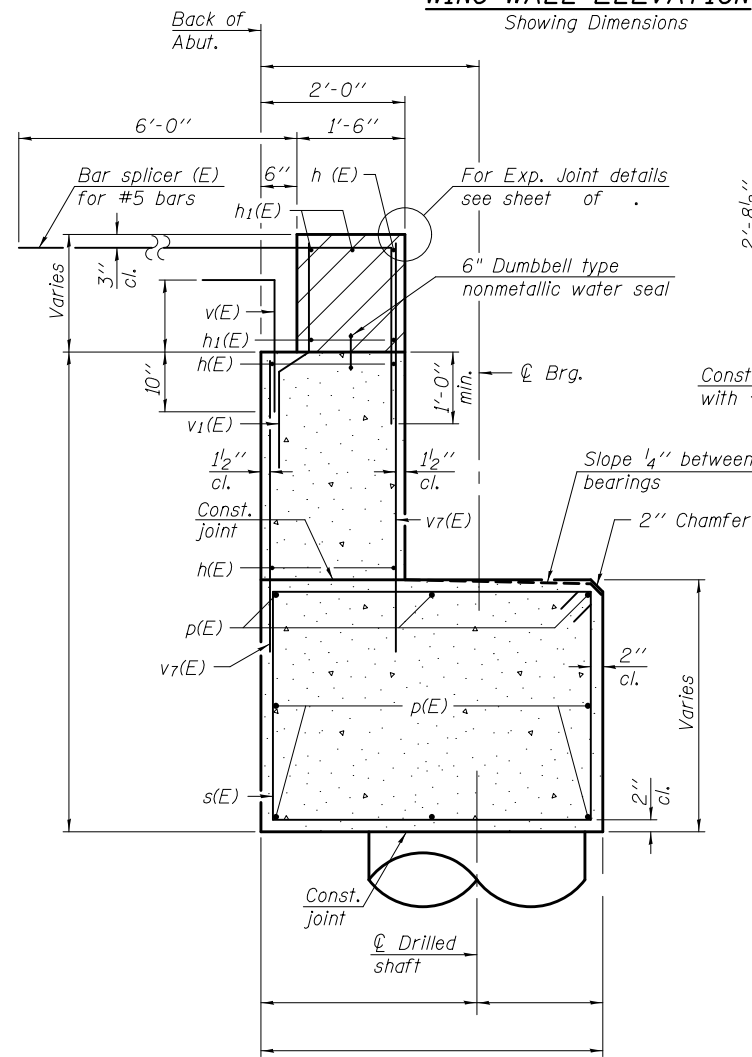
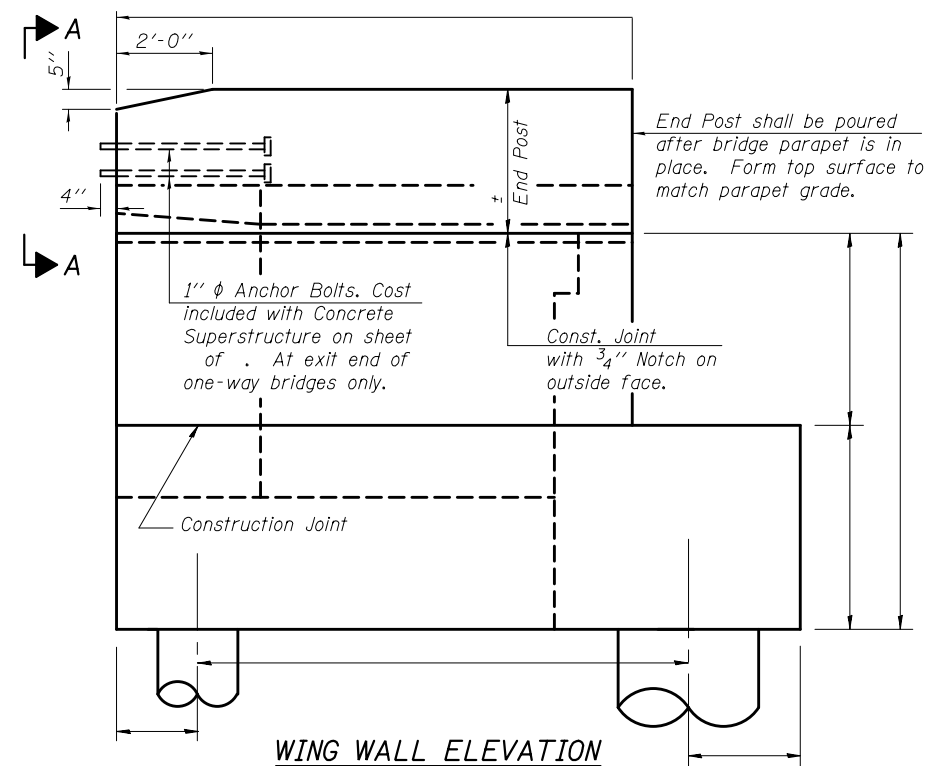
Notes:
Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet - of - .
For Concrete Encasement details, see sheet - of - .



A-1-D

1-27-12

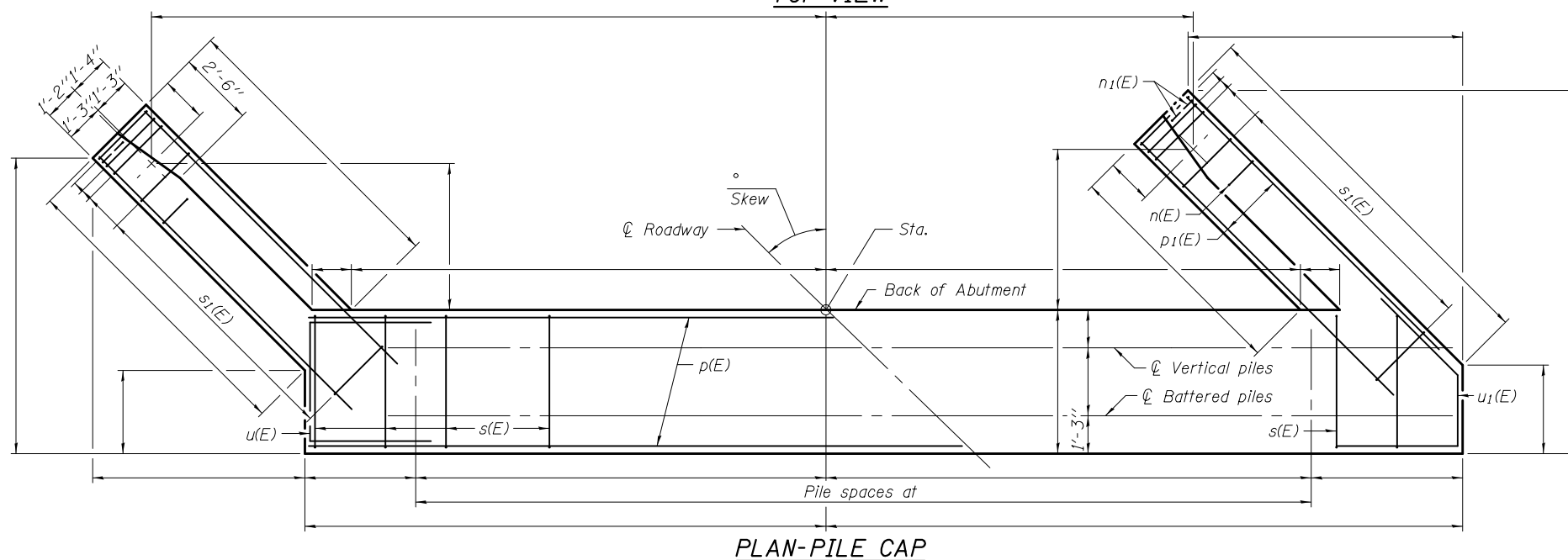
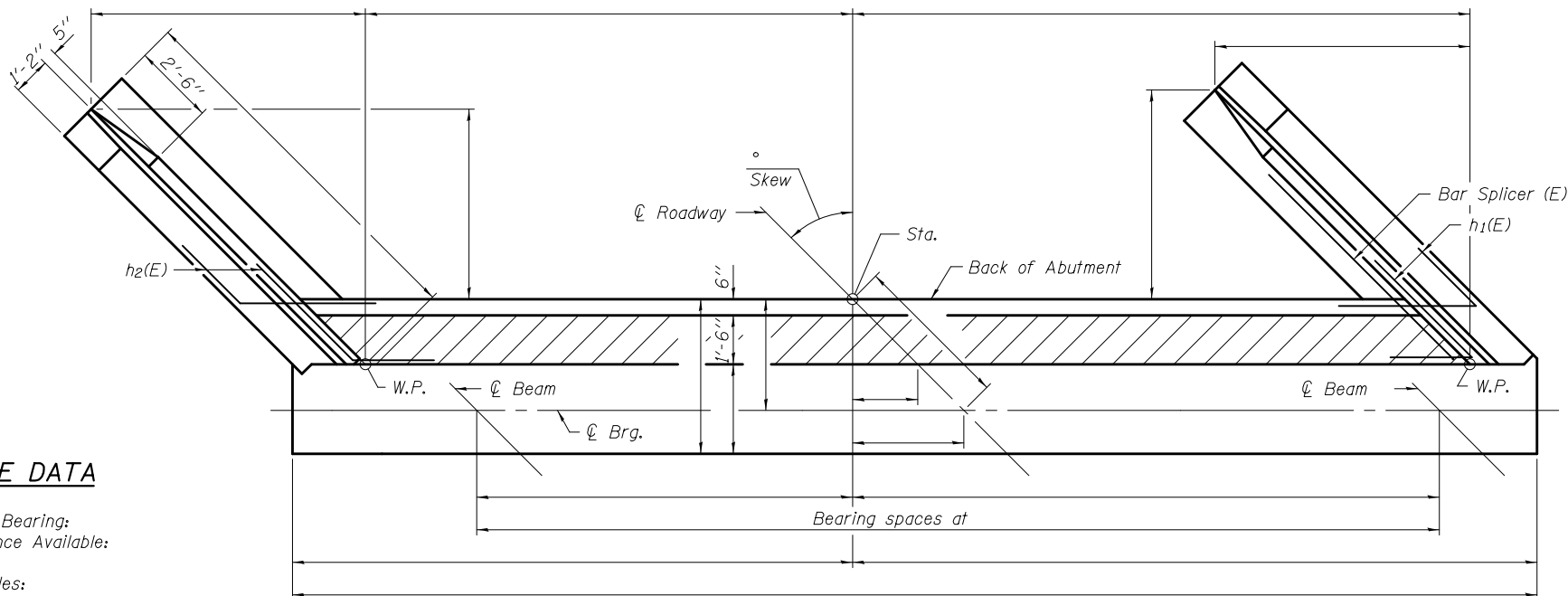
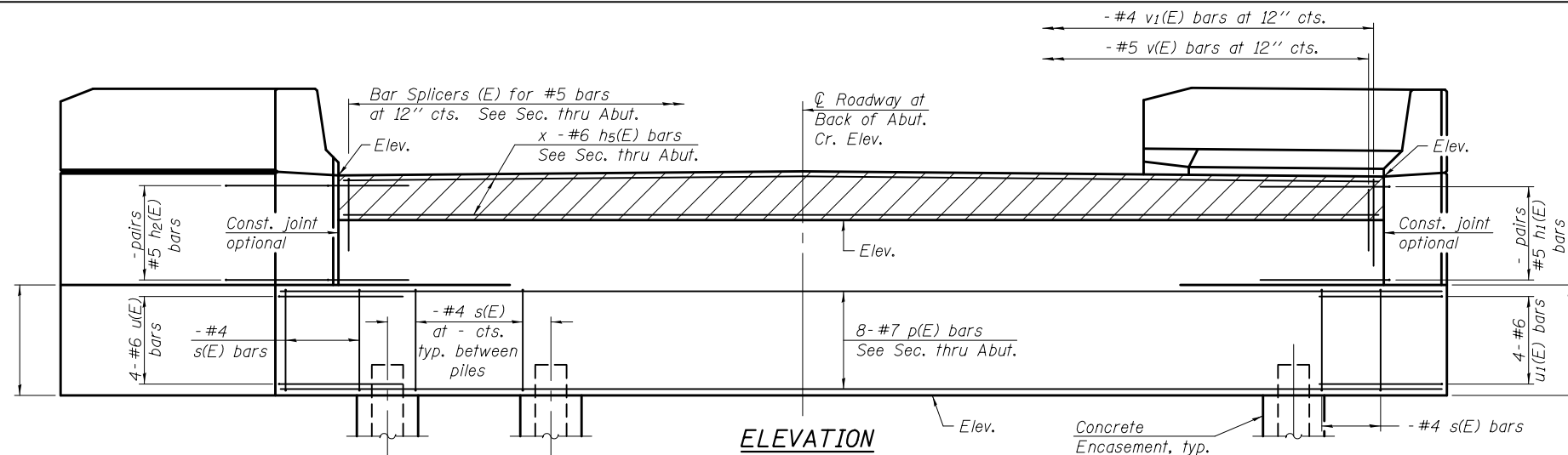
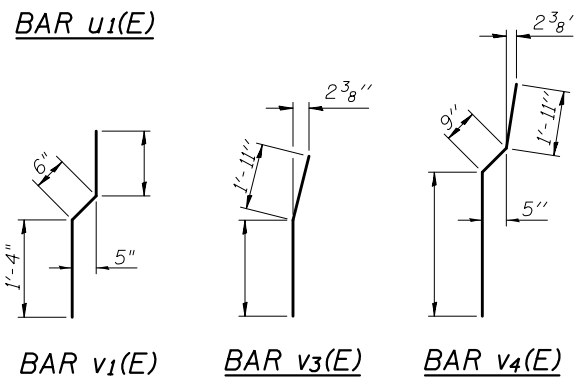
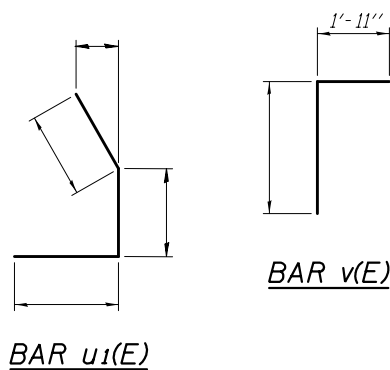
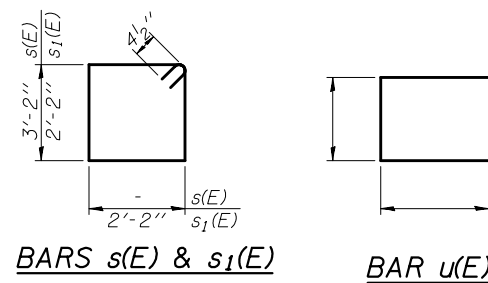
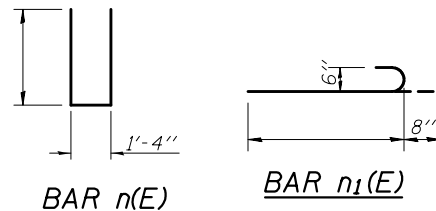
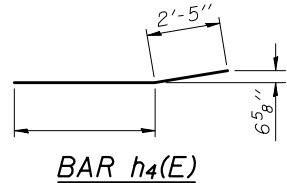
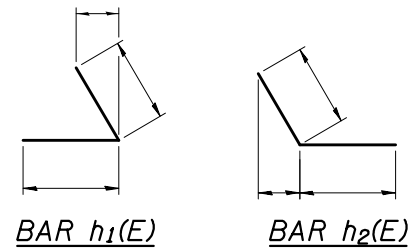
FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.		
		CHECKED -	REVISED -									
	PLOT SCALE =	DRAWN -	REVISED -									
	PLOT DATE =	CHECKED -	REVISED -									
						CONTRACT NO.						
						ILLINOIS FED. AID PROJECT						



Notes:
Quantity of concrete in end post included with Concrete
Superstructure on sheet of .
Min. lap for spirals = .
Pour steps monolithically with cap.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.

**** Provide 1½ extra turns top and bottom of each drilled shaft. Extend spiral 2" into abutment or wingwall cap. Provide min. 4-#4 spacers or equivalent.**



ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#5		
$h_1(E)$		#5		
$h_2(E)$		#5		
$h_3(E)$		#4		
$h_4(E)$		#4		
$h_5(E)$		#6		
$n(E)$		#6		
$n_1(E)$		#6		
$p(E)$		#7		
$p_1(E)$		#7		
$s(E)$		#4		
$s_1(E)$		#4		
$u(E)$		#6		
$u_1(E)$		#6		
$v(E)$		#4		
$v_1(E)$		#4		
$v_2(E)$		#6		
$v_3(E)$		#6		
$v_4(E)$		#6		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	
Concrete Sealer			Sq. Ft.	

For details of Bar Splicers, see sheet - of - .
 For details of piles and Concrete Encasement, see sheet - of - .

A-1-L (>30°)

1-27-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENTS
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

$$\frac{BAR \ h_1(E)}{\quad} \qquad \frac{BAR \ h_2(E)}{\quad}$$

BAR $h_4(E)$

$$BAR \quad n(E)$$
$$\underline{BAR \ n_1(E)}$$

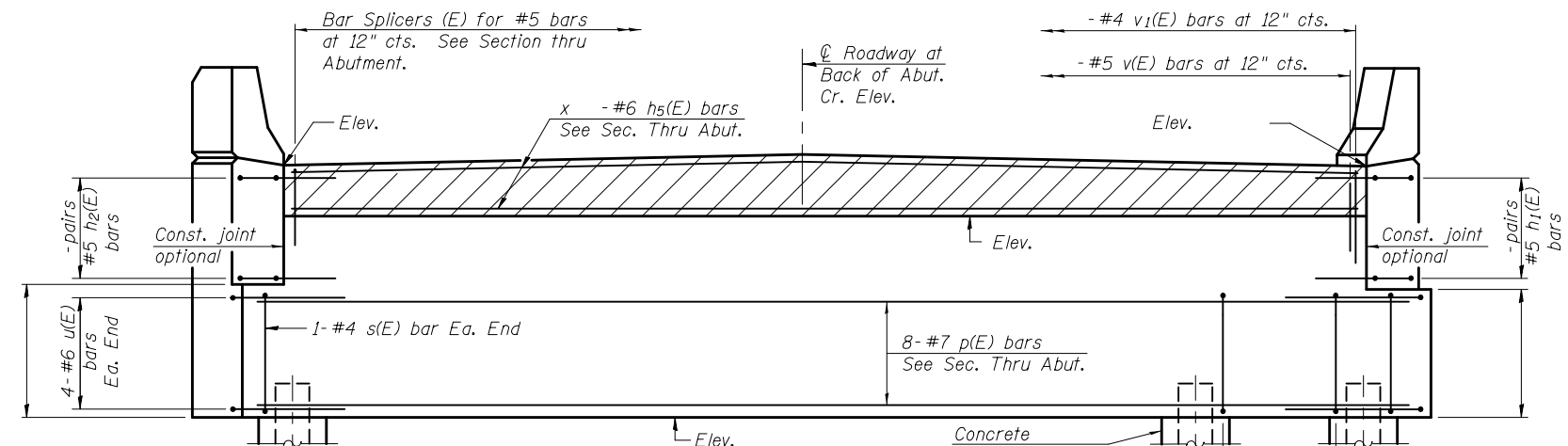
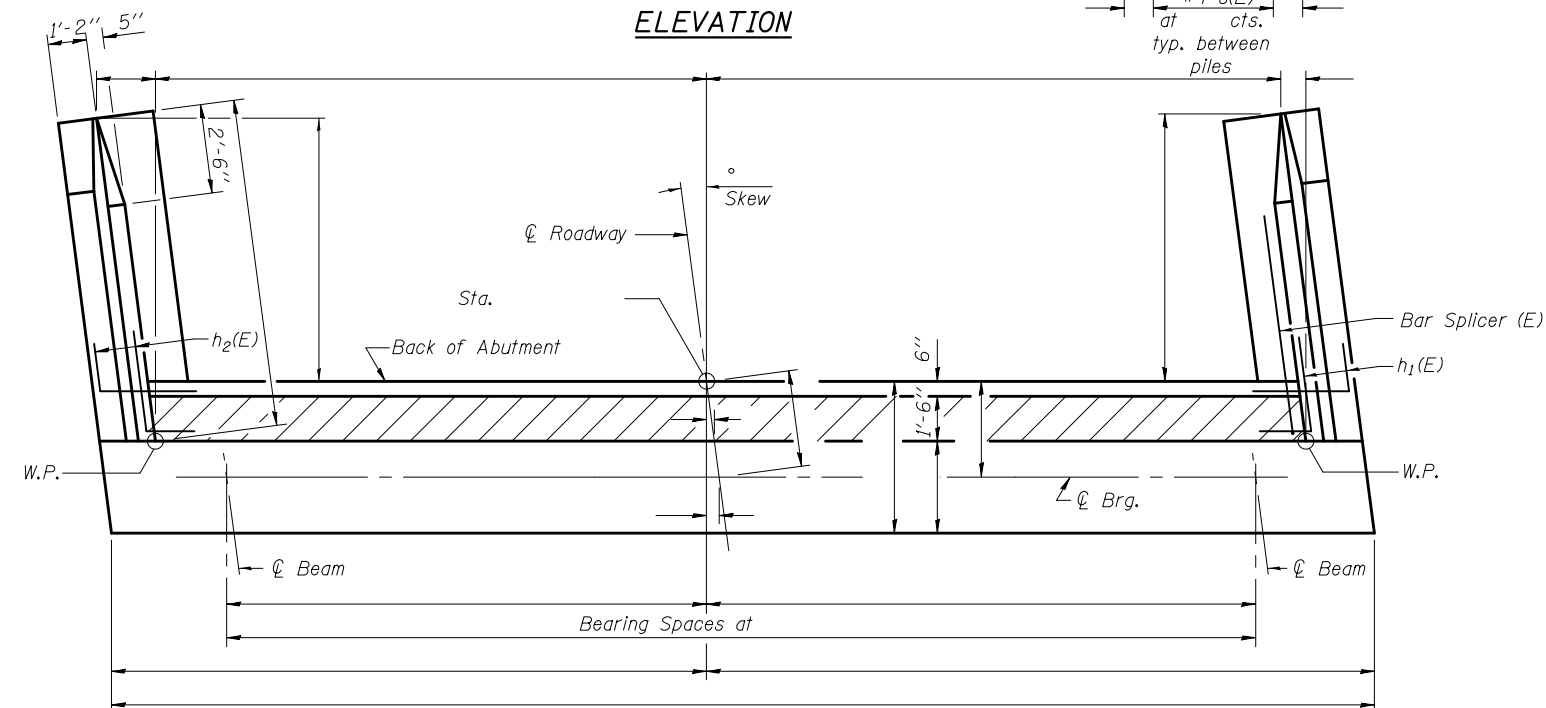
BARS $s(E)$ & $s_1(E)$

BAR $u(E)$

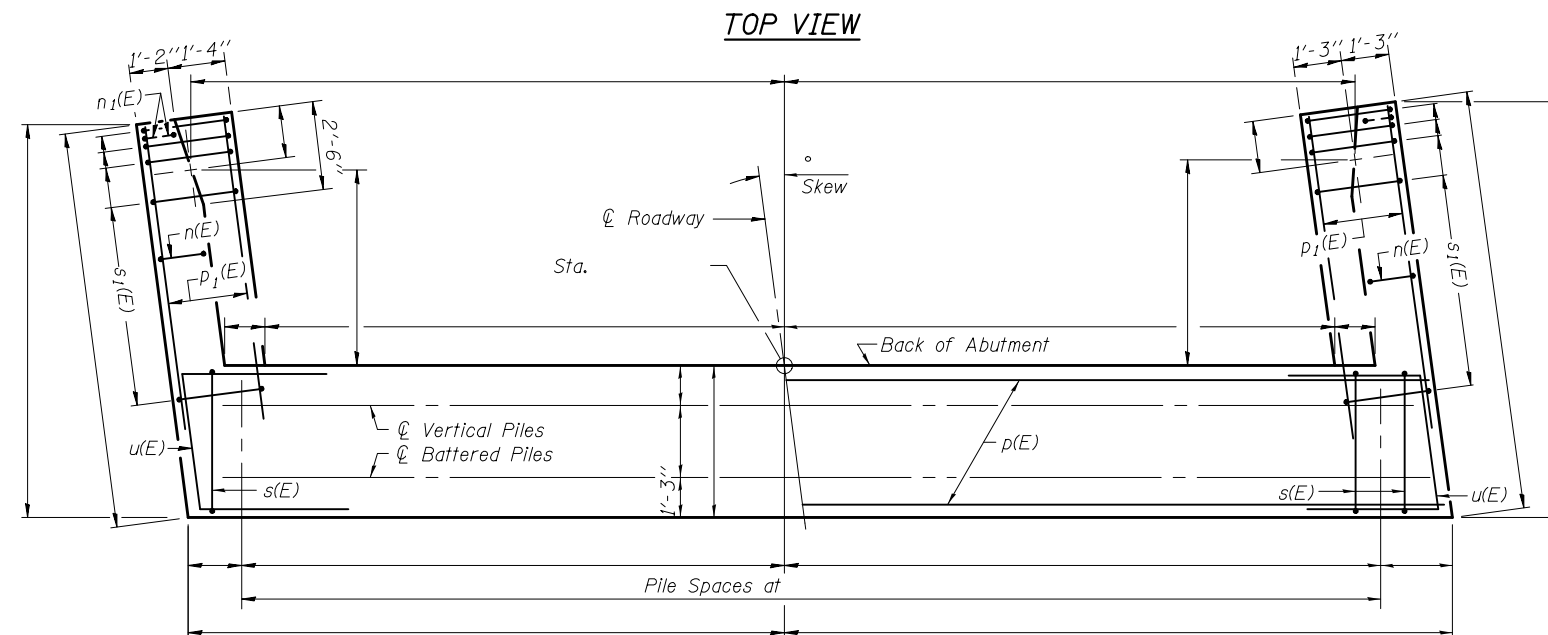
 $\underline{BAR} \ v(E)$ $BAR \ v_1(E)$
$$\underline{BAR \ v_3(E)}$$
$$\underline{BAR \ v_4(E)}$$

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



















ELEVATION

TOP VIEW



PLAN-PILE CAP

ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#5		
$h_1(E)$		#5		
$h_2(E)$		#5		
$h_3(E)$		#4		
$h_4(E)$		#4		
$h_5(E)$		#6		
$n(E)$		#6		
$n_1(E)$		#6		
$p(E)$		#7		
$p_1(E)$		#7		
$s(E)$		#4		
$s_1(E)$		#4		
$u(E)$		#6		
$v(E)$		#5		
$v_1(E)$		#4		
$v_2(E)$		#6		
$v_3(E)$		#6		
$v_4(E)$		#6		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	
Concrete Sealer			Sq. Ft.	

For details of Bar Splicers, see sheet - of - .
For details of piles and Concrete Encasement,
see sheet - of - .

A-1-L ($\leq 30^\circ$)

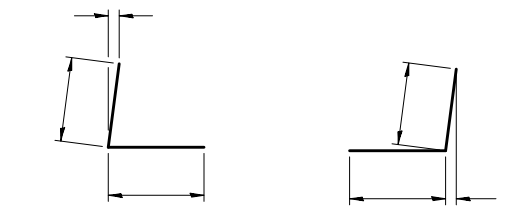
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

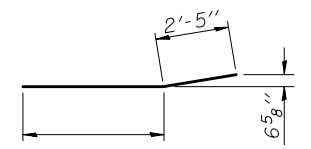
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENTS
STRUCTURE NO.

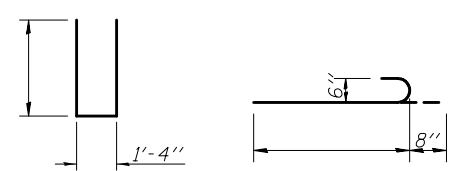
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				



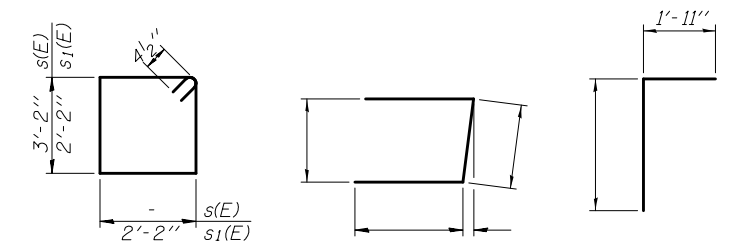
BAR $h_1(E)$ BAR $h_2(E)$



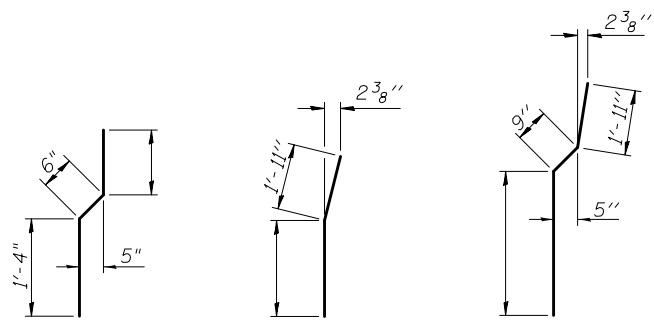
BAR $h_4(E)$



BAR $n(E)$ BAR $n_1(E)$



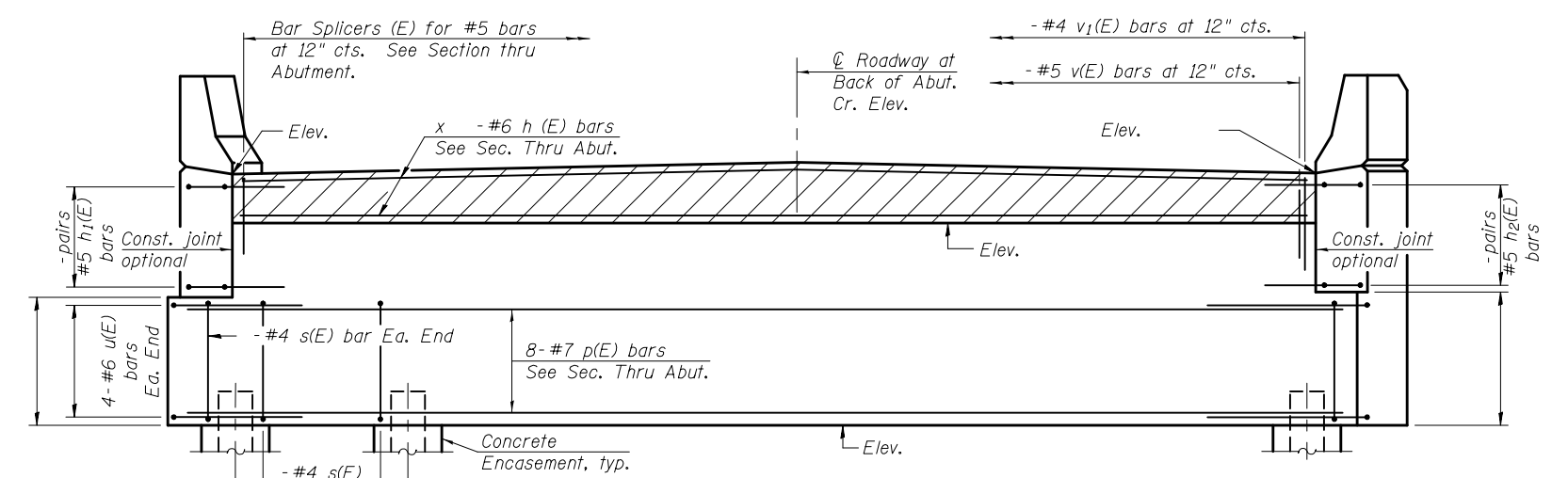
BARS $s(E)$ & $s_1(E)$ BAR $u(E)$ BAR $v(E)$



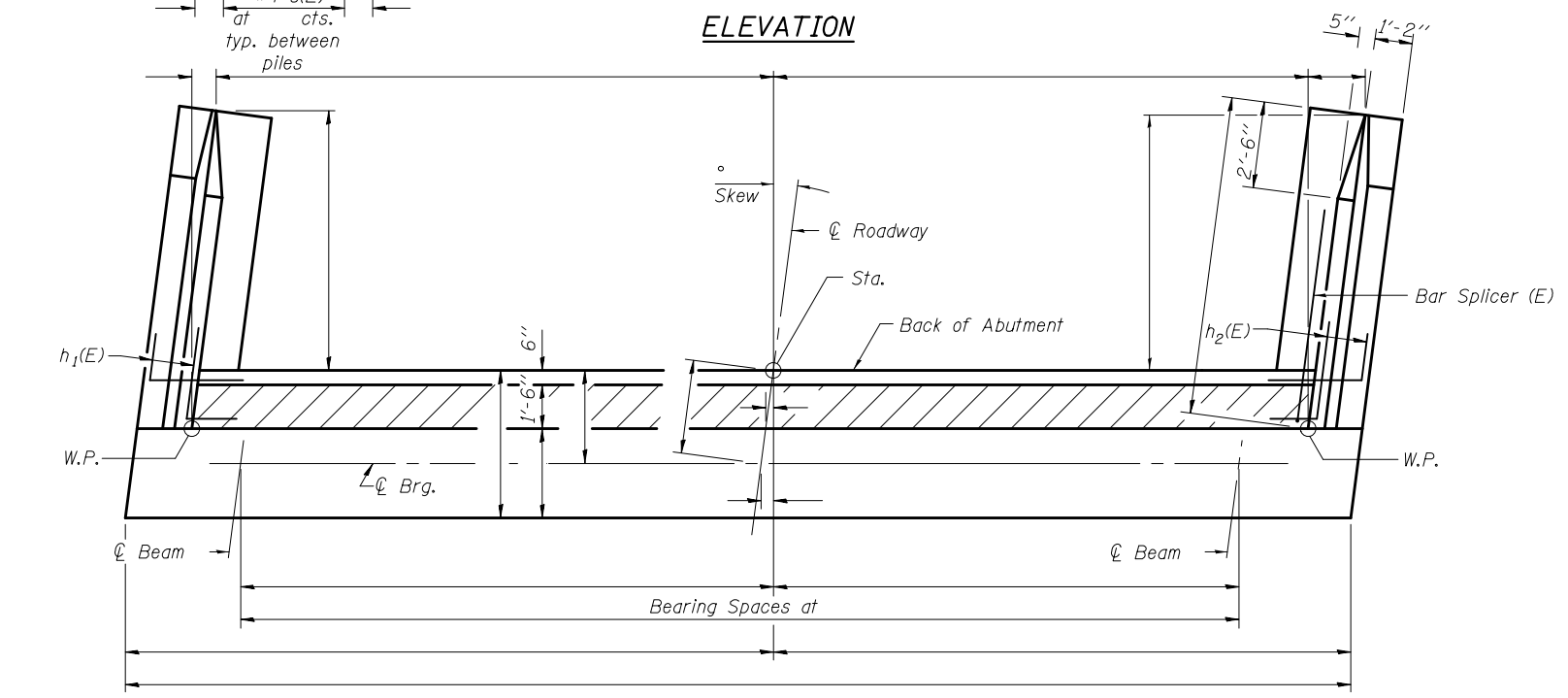
BAR $v_1(E)$ BAR $v_3(E)$ BAR $v_4(E)$

PILE DATA

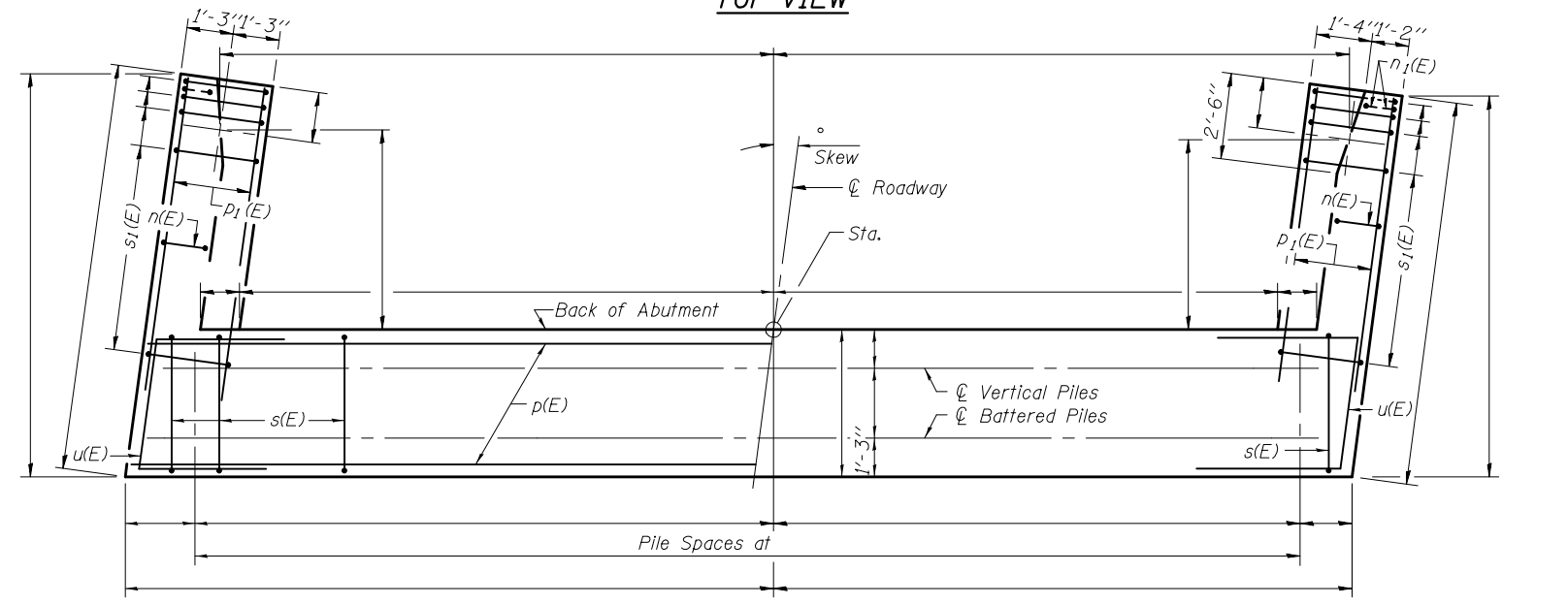
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



ELEVATION



TOP VIEW



PLAN-PILE CAP

**ABUTMENT
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
$h(E)$		#5		
$h_1(E)$		#5		
$h_2(E)$		#5		
$h_3(E)$		#4		
$h_4(E)$		#4		
$h_5(E)$		#6		
$n(E)$		#6		
$n_1(E)$		#6		
$p(E)$		#7		
$p_1(E)$		#7		
$s(E)$		#4		
$s_1(E)$		#4		
$u(E)$		#6		
$v(E)$		#5		
$v_1(E)$		#4		
$v_2(E)$		#6		
$v_3(E)$		#6		
$v_4(E)$		#6		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	
Concrete Sealer			Sq. Ft.	

For details of Bar Splicers, see sheet - of -.
For details of piles and Concrete Encasement, see sheet - of -.

A-1-R (<30°)

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENTS
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

erected.

Elev.

* Mandatory const. joint

Elev.

Elev.

Mandatory const. joint

2'-6"

$u_1(E)$

2-#4 $h_1(E)$ bars
See Sec. Thru Abut.

10-# $p(E)$ bars
See Sec. Thru Abut.

Concrete Encasement, typ.

Elev.

- # $s(E)$ bars at cts., typ. between piles

typ.

ELEVATION

Figure 10.10 is a cross-sectional diagram of a pile cap. The diagram shows a central square section with a side length of 2" cl. typ. This central section is surrounded by a larger square section with a side length of 1'-0". The total width of the cap is 1'-0". The height of the cap is labeled as h₁(E). The cap is supported by a central pile and four corner piles. The cap is labeled "Brg." and "Abut. and Piles". The height of the cap varies from 3'-0" to 3'-6". The cap is shown with a 6" top flange and a 1" bottom flange. The cap is shown with a 2" central section and a 1'-0" outer section. The cap is shown with a 1" bottom section and a 1'-0" top section. The cap is shown with a 1" bottom section and a 1'-0" top section. The cap is shown with a 1" bottom section and a 1'-0" top section.

Technical drawing of a cross-section of a bridge structure, showing reinforcement details and dimensions.

Top View (Plan View):





- Overall width: 1'-0"
- Overall depth: 2'-0"
- Top reinforcement: #5 $v_1(E)$ bars at 12" cts.
- Bottom reinforcement: #4 $u_1(E)$ bars at 12" cts.
- Section line A-A is indicated.

Side View (Elevation View):

- Overall height: 2'-0"
- Reinforcement details:
 - Top reinforcement: #5 $v_1(E)$ bars at 12" cts.
 - Bottom reinforcement: #4 $u_1(E)$ bars at 12" cts.
- Structural features and dimensions:
 - Back of . Abut. Sta.
 - Abut. and Piles
 - h(E)
 - v(E)
 - s(E)
 - u(E)
 - p(E)
 - h₁(E)

The diagram shows a cross-section of a beam with a diagonal cut line. Above the cut line, there are two vertical lines representing reinforcement bars, labeled "- #5 w(E) bars". The cut line is labeled "Cut Line".

Diagram of a U-shaped bar. The vertical height of the left leg is labeled $\frac{u(E)}{u_I(E)}$. The horizontal width of the bottom leg is labeled $\frac{u(E)}{u_I(E)}$. The label BAR $v_I(E)$ is positioned below the right leg.

Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$	2	#4		_____
$p(E)$	10	#		_____
$s(E)$		#		
$u(E)$	8	#6		
$u_1(E)$		#4		
$v(E)$		#5		_____
$v_1(E)$		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<div style="text-align: center;"> STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION </div>	<div style="text-align: center;"> ABUTMENTS STRUCTURE NO. </div>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -			<div style="text-align: center;"> CONTRACT NO. </div>				
	PLOT DATE =	CHECKED -	REVISED -							






[illegible][illegible][illegible]

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

The diagram shows a cross-section of a beam. A horizontal line represents the top surface. Below it, a diagonal line is labeled "Cut Line". Above the cut line, there are two vertical lines representing reinforcement bars, with the text "- #5 v(E) bars" between them. The entire diagram is enclosed in a rectangular frame.

A diagram of a square with a side length of 2'-2". The bottom-left corner is cut off by a line segment. The distance from the bottom-left corner to the cut is labeled $s(E)$ and $s_1(E)$. The cut is defined by a line segment labeled $s(E)$ and $s_1(E)$.

A diagram of a stepped profile. It consists of a horizontal top edge, a vertical right edge, and a horizontal bottom edge. The top edge is divided into two segments by a vertical line. The left segment is labeled with a dimension line and the value 1. The right segment is labeled with a dimension line and the value 2. The vertical right edge is labeled with a dimension line and the value 3. The horizontal bottom edge is labeled with a dimension line and the value 4. A diagonal line segment connects the top-right corner to the bottom-right corner, labeled with a dimension line and the value 5.

Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$	2	#4		_____
$p(E)$	10	#		_____
$s(E)$		#		
$s_1(E)$		#		
$u(E)$	8	#6		
$u_1(E)$		#4		
$v(E)$		#5		_____
$v_1(E)$		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	

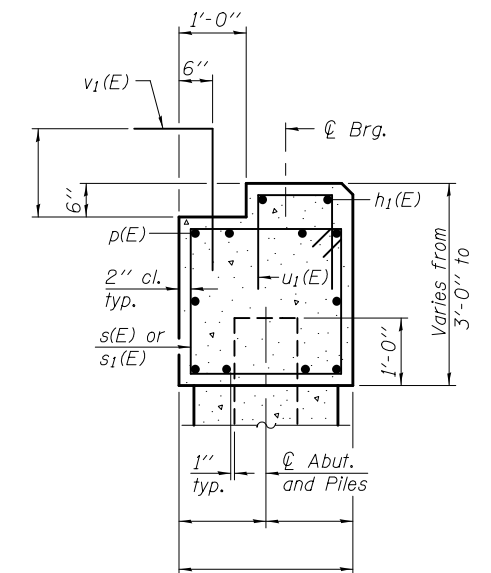
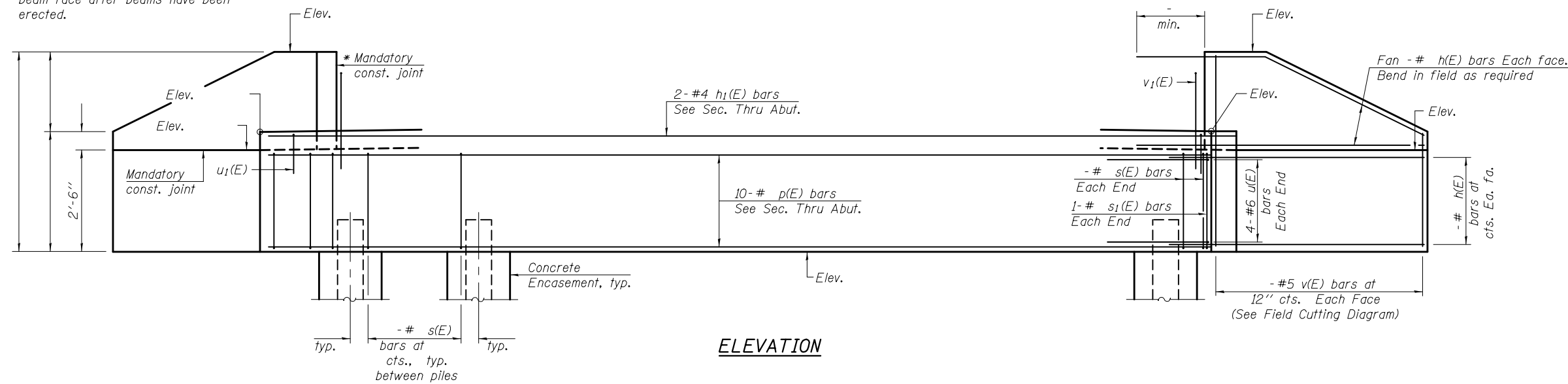
7-1-10

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		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

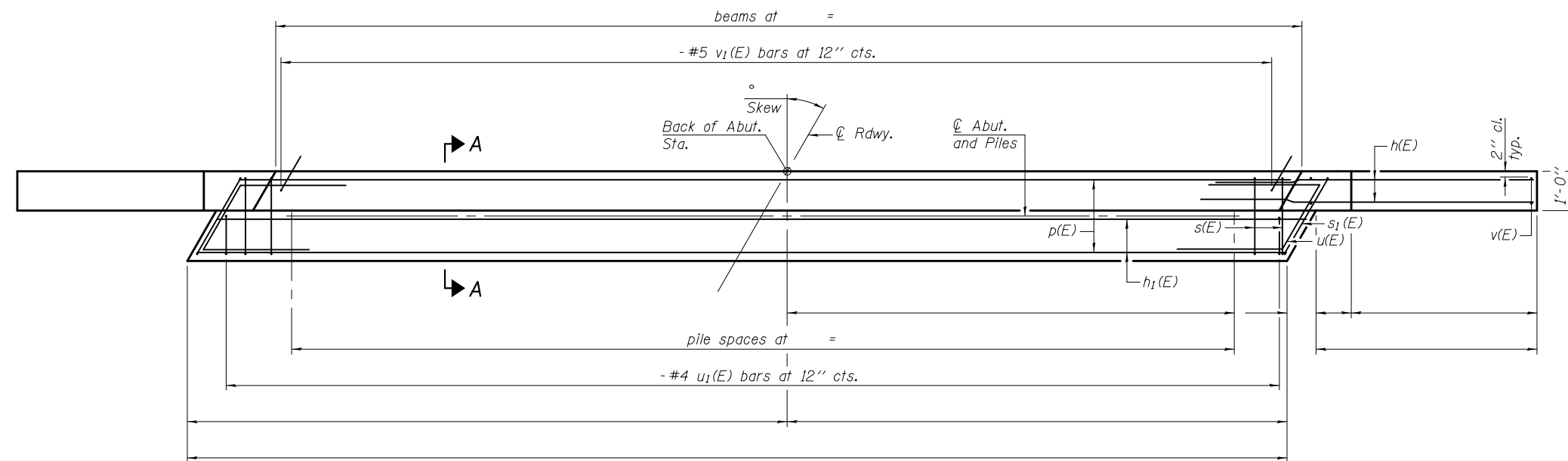
ABUTMENTS
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

- * Cast top of wingwall flush with exterior beam face after beams have been erected.



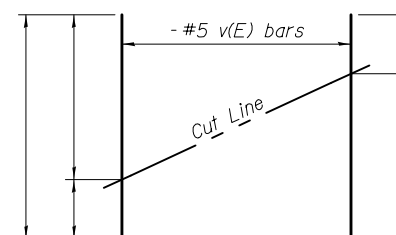
SECTION A-A
(Dimensions are at Rt. L's)



PLAN

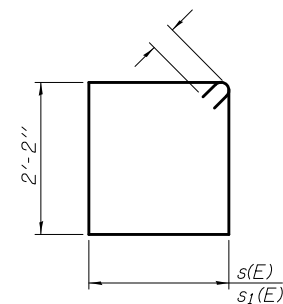
PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

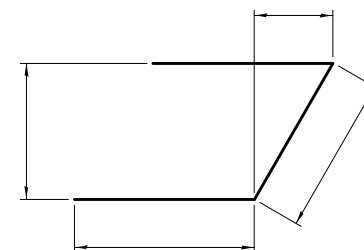


FIELD CUTTING DIAGRAM

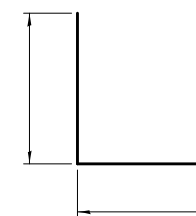
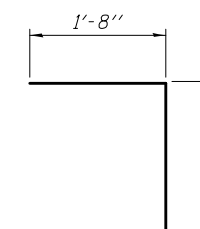
Order $v(E)$ full length. Cut as shown and use remainder of bars in opposite face.








BARS $s(E)$ & $s_1(E)$



BAR $u(E)$


$$\underline{BAR \ u_1(E)}$$

$$\underline{BAR \ v_1(E)}$$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$	2	#4		_____
$p(E)$	10	#		_____
$s(E)$		#		
$s_1(E)$		#		
$u(E)$	8	#6		
$u_1(E)$		#4		
$v(E)$		#5		_____
$v_1(E)$		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	

For details of piles and Concrete Encasement,
see sheet - of - .

AD-11-R

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.				
	PLOT DATE =	CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT				

The diagram is a detailed elevation view of a bridge structure, likely a girder bridge, showing various components and reinforcement details. The structure consists of a main span and two abutments. The main span is supported by two piers, each with a concrete encasement. The abutments are shown on the left and right sides. The diagram includes the following details:

- Left Abutment:** Shows a sloped top surface and a vertical face. A "Mandatory const. joint" is indicated on the vertical face. The height of the abutment is labeled as "3'-0\"".
- Main Span:** A long horizontal section supported by two piers. The piers have "Concrete Encasement, typ." (typical). The span is reinforced with "10-# p(E) bars See Sec. Thru Abut." (10 #5 bars, see section through abutment).
- Right Abutment:** Similar to the left abutment, it has a sloped top surface and a vertical face. A "Mandatory const. joint" is indicated on the vertical face. The height of the abutment is labeled as "3'-0\"".
- Reinforcement Details:**
 - Top Reinforcement:** "Fan - # h(E) bars Each face. Bend in field as required" (Fan #4 bars, each face, bend in field as required).
 - Vertical Reinforcement:** "v₁(E)" (vertical bars).
 - Horizontal Reinforcement:** "s(E) bars Each end" (horizontal bars, each end).
 - Bottom Reinforcement:** "4-#6 u(E) bars Each end" (4 #6 bars, each end).
 - Bottom Reinforcement (Piers):** "- #5 v(E) bars at 12\" cts. Each face (See Field Cutting Diagram)" (#5 bars, each face, at 12" centers, see field cutting diagram).
 - Bottom Reinforcement (Span):** "- # s(E) bars at cts., typ. between piers" (#5 bars, at centers, typical between piers).
- Labels and Dimensions:**
 - "Elev." (Elevation) is labeled at several points.
 - "min." (minimum) is labeled for a dimension on the right abutment.
 - "3'-0\"" (3 feet 0 inches) is labeled for the height of the abutments.
 - "12\" cts." (12 inches centers) is labeled for the spacing of the bottom reinforcement in the piers.

ELEVATION

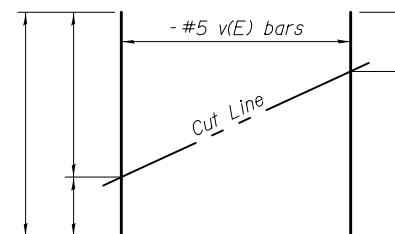
Diagram illustrating the cross-section of a pile cap. The cap is shown with a central rectangular area containing reinforcement bars (piles) and a surrounding concrete area. Key dimensions and labels include:

- $v_1(E)$: Vertical dimension of the top section.
- $6''$: Horizontal dimension of the top section.
- ϕ Brg.: Dimension of the top section.
- $p(E)$: Vertical dimension of the middle section.
- $\frac{2''}{typ.}$: Horizontal dimension of the middle section.
- $s(E)$: Vertical dimension of the bottom section.
- $1'-0''$: Horizontal dimension of the bottom section.
- ϕ Abut. and Piles: Dimension of the bottom section.
- $1'' typ.$: Horizontal dimension of the bottom section.
- Varies from $3'-0''$ to $3'-0''$: Vertical dimension of the bottom section.

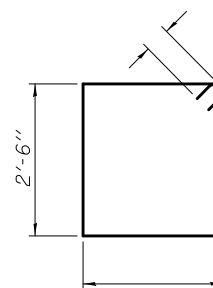
Technical drawing of a bridge cross-section. The drawing shows a concrete deck with reinforcement bars. Key dimensions and labels include:

- beams at** =
- #5 $v_1(E)$ bars at 12" cts.**
- Back of . Abut. Sta.**
- Abut. and Piles**
- $h(E)$**
- $v(E)$**
- 2" cl. typ.**
- $s(E)$**
- $u(E)$**
- $p(E)$**
- pile spaces at** =
- $1'-0"$**
- A**
- A**

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:






Order $v(E)$ bars full length. Cut as shown and use remainder of bars in opposite face.



A dimension line with arrows at both ends, indicating a length of $l' - 8''$.

Bar	No.	Size	Length	Shape
$h(E)$		#		_____

$p(E)$	10	#		_____
$s(E)$		#		
$u(E)$	8	#6		
$v(E)$		#5		_____
$v_1(E)$		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.				
	PLOT DATE =	CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT				

erected.

Elev.

* Mandatory const. joint

Elev.

3'-0"

Mandatory const. joint

10-# $p(E)$ bars
See Sec. Thru Abut.

Concrete Encasement, typ.

typ.

-# $s(E)$ bars at cts., typ. between piles

typ.

Elev.

Min.

Elev.

Fan -# $h(E)$ bars Each face.
Bend in field as required

-# $s(E)$ bars Each End

1-# $s_1(E)$ bars Each End

4-# $u(E)$ bars Each End

-# $h(E)$ bars at cts. Ea. fa.

-#5 $v(E)$ bars at 12" cts. Each Face
(See Field Cutting Diagram)

ELEVATION

The diagram illustrates a cross-section of a pile cap. Key dimensions and features include:

- Top Reinforcement:** Labeled $v_I(E)$ with a dimension of 6" from the left edge.
- Cap Width:** Indicated by a dimension line at the bottom.
- Cap Height:** Labeled "Varies from 3'-0" to 1'-0" on the right side.
- Internal Dimensions:**
 - Top reinforcement spacing: 2" cl. typ.
 - Bottom reinforcement spacing: 1'-0"
 - Bottom reinforcement offset: 1" typ.
- Reinforcement Details:**
 - Top reinforcement: $p(E)$
 - Bottom reinforcement: $s(E)$ or $s_I(E)$
 - Bottom reinforcement offset: 1" typ.
- Labels:**
 - Top right: C Brg.
 - Bottom right: C Abut. and Piles

beams at =

- #5 $v_1(E)$ bars at 12" cts.

Skew

Back of Abut. Sta.

$p(E)$

$s(E)$

$s_1(E)$

$u(E)$

$h(E)$

$v(E)$

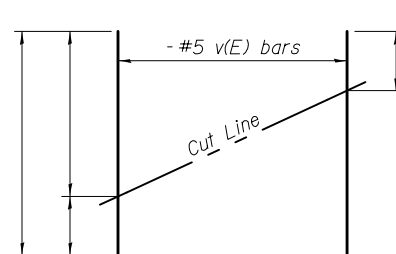
2" cl. typ.

A

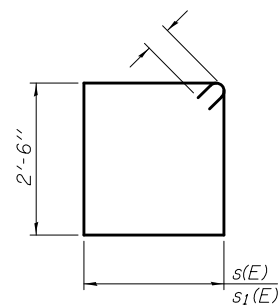
A

pile spaces at =

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____



Order $v(E)$ full length. Cut as shown and use remainder of bars in opposite face.



A diagram of a stepped profile. It consists of a horizontal top edge, a vertical edge, a horizontal bottom edge, and a diagonal edge connecting the top and bottom edges. Dimensions are indicated by arrows: a horizontal dimension for the top edge, a vertical dimension for the left side, a horizontal dimension for the bottom edge, and a diagonal dimension for the diagonal edge.

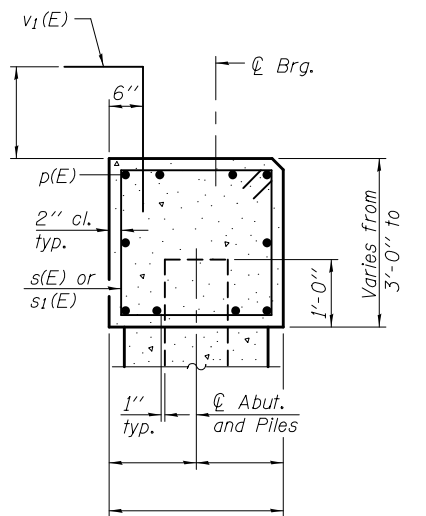
Diagram of a T-junction. The horizontal pipe has a diameter of 1'-8".

Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$p(E)$	10	#		_____
$s(E)$		#		<input checked="" type="checkbox"/>
$s_I(E)$		#		<input checked="" type="checkbox"/>
$u(E)$	8	#6		⌋
$v(E)$		#5		_____
$v_I(E)$		#5		⌋
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
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	PLOT DATE =	CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT				

* Cast top of wingwall flush with exterior beam face after beams have been erected.

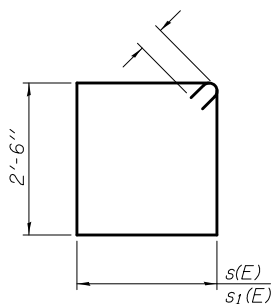


SECTION A-A
(Dimensions are at Rt. L's)

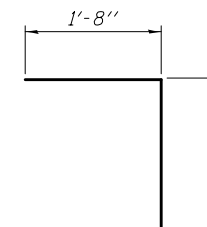


PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



BARS $s(E)$ & $s_1(E)$


$$\underline{BAR \ v_1(E)}$$

FIELD CUTTING DIAGRAM

Order v(E) full length. Cut as shown and use remainder of bars in opposite face.

AD-1721-R

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENTS
STRUCTURE NO

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

For details of piles and Concrete Encasement,
see sheet - of - .

erected.

Elev.

* Mandatory const. joint

Elev.

3'-0"

Mandatory const. joint

- #5 $h_1(E)$ bars
See Sec. Thru Abut.

10- # $p(E)$ bars
See Sec. Thru Abut.

Concrete Encasement, typ.

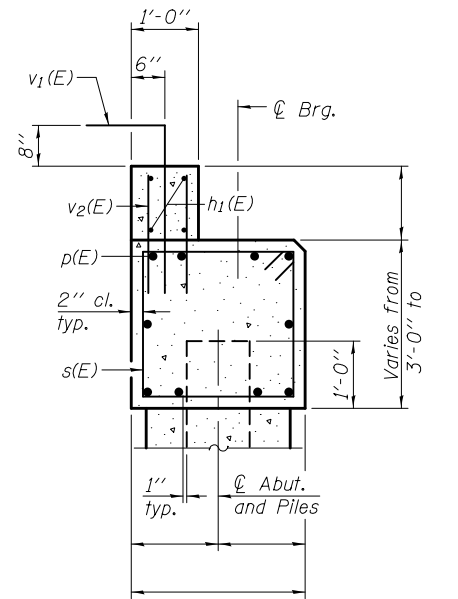
Elev.

typ.

- # $s(E)$
bars at
cts., typ.
between piles

ELEVATION

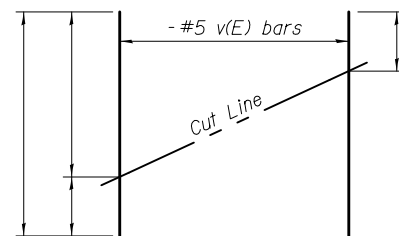
- min.
 Elev.
 $v_1(E)$
 $v_2(E)$
 Elev.
 Fan - # $h(E)$ bars Each face.
 Bend in field as required
 - # $s(E)$ bars Each end
 4 - #6 $u(E)$ bars Each end
 - # $h(E)$ bars at cts. Ea. fa.
 - #5 $v(E)$ bars at 12" cts. Each face
 (See Field Cutting Diagram)



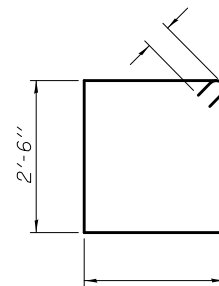
Technical drawing of a cross-section of a bridge structure, showing beams, piles, and various dimensions. The drawing includes the following labels and dimensions:




- Beams:**
 - beams at =
 - #5 $v_1(E)$ bars at 12" cts.
 - #5 $v_2(E)$ bars at 12" cts. Each face
- Dimensions and Spacing:**
 - pile spaces at =
 - $h_1(E)$
 - $h(E)$
 - $v(E)$
 - $2''$ cl. typ.
 - $s(E)$
 - $u(E)$
 - $p(E)$
- Structural Features:**
 - Back of . Abut. Sta.
 - Abut. and Piles
 - Rdwy.
- Section Markers:**
 - A
 - A
- Other Labels:**
 - 1'-0"

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



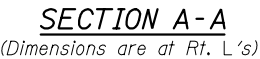
Order $v(E)$ bars full length. Cut as shown and use remainder of bars in opposite face.



Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$		#5		_____
$p(E)$	10	#		_____
$s(E)$		#		
$u(E)$	8	#6		
$v(E)$		#5		_____
$v_1(E)$		#5		
$v_2(E)$		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Encasement			Cu. Yd.	

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -								
	ILLINOIS FED. AID PROJECT										



Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

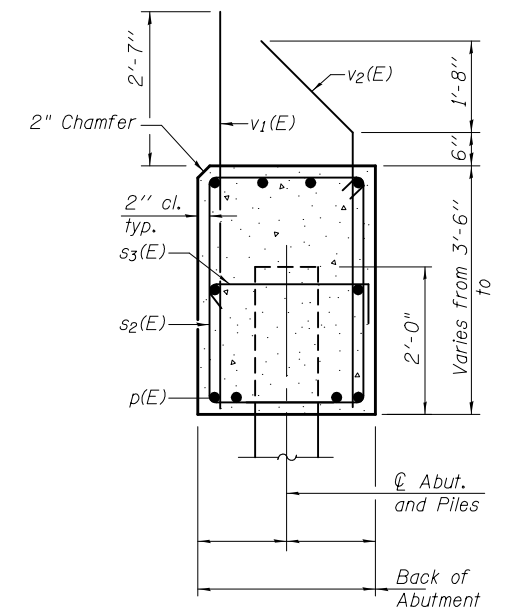
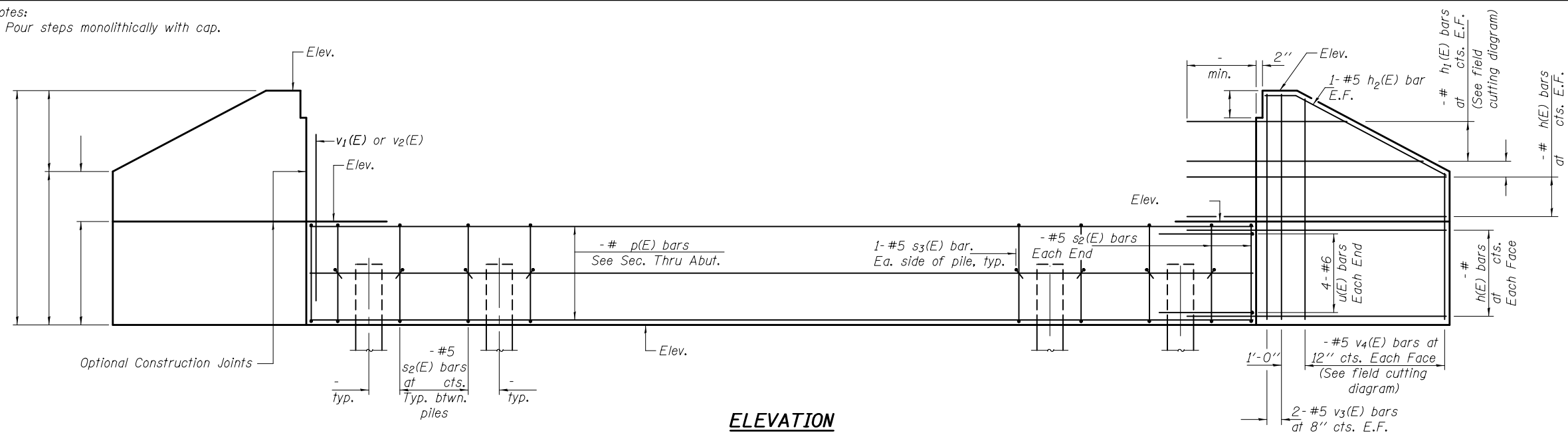


BARS $s(E)$ & $s_1(E)$



Notes:
For details of piles and Concrete Encasement,
see sheet - of - .
Cast backwall after beams and concrete wearing
surface, if applicable, have been erected.

Notes:
Pour steps monolithically with cap.

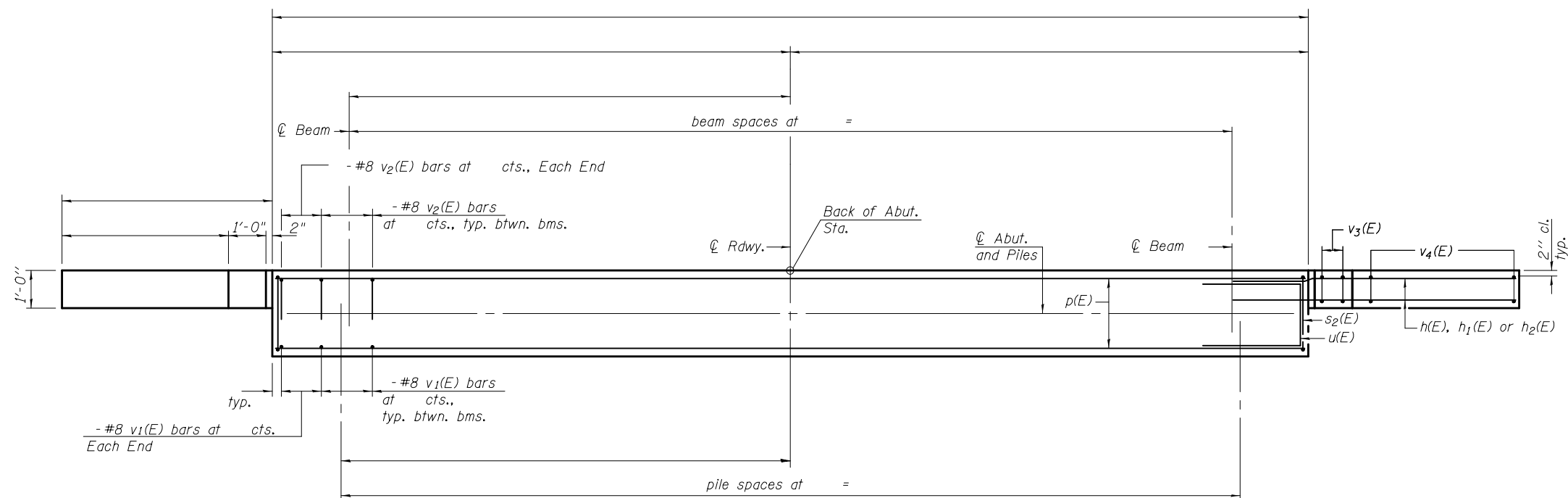


SEC. THRU ABUT.

BILL OF MATERIAL

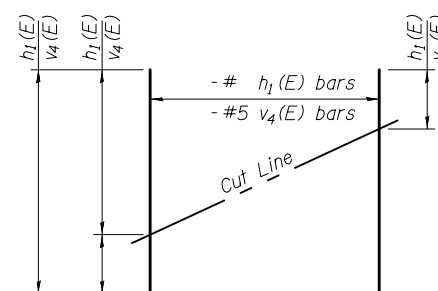
Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$		#		_____
$h_2(E)$	4	#5		_____ ↗
$p(E)$		#		_____
$s_2(E)$		#5		□
$s_3(E)$		#5		└┐
$u(E)$	8	#6		▬
$v_1(E)$		#8	5'-11"	_____
$v_2(E)$		#8	6'-2"	_____ ↗
$v_3(E)$		#5		_____
$v_4(E)$		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

For details of piles see sheet of .



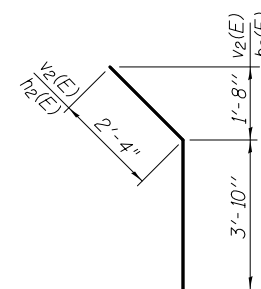
PILE DATA

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

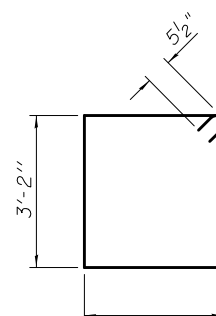
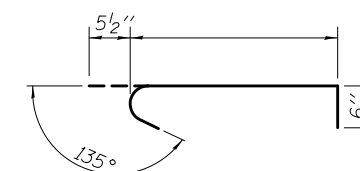
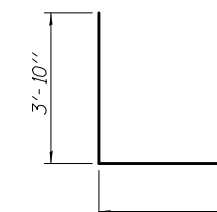


FIELD CUTTING DIAGRAM

Order $h_1(E)$ and $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $v_2(E)$ & $h_2(E)$

 $BAR \ s_2(E)$  $BAR \ s_3(E)$ 

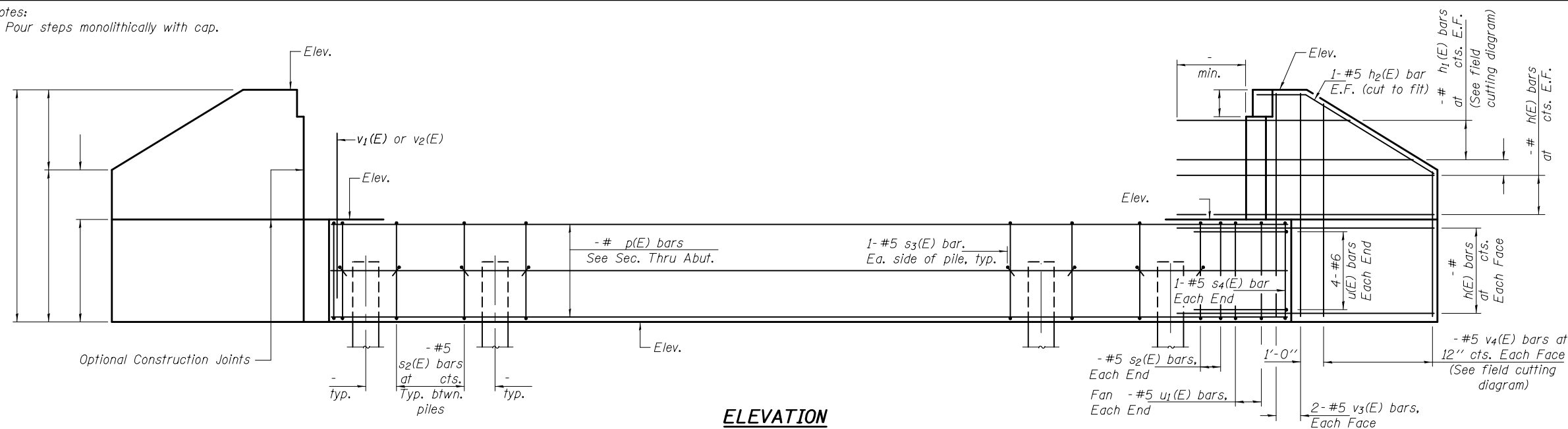
BAR $u(E)$

AI-2440-0

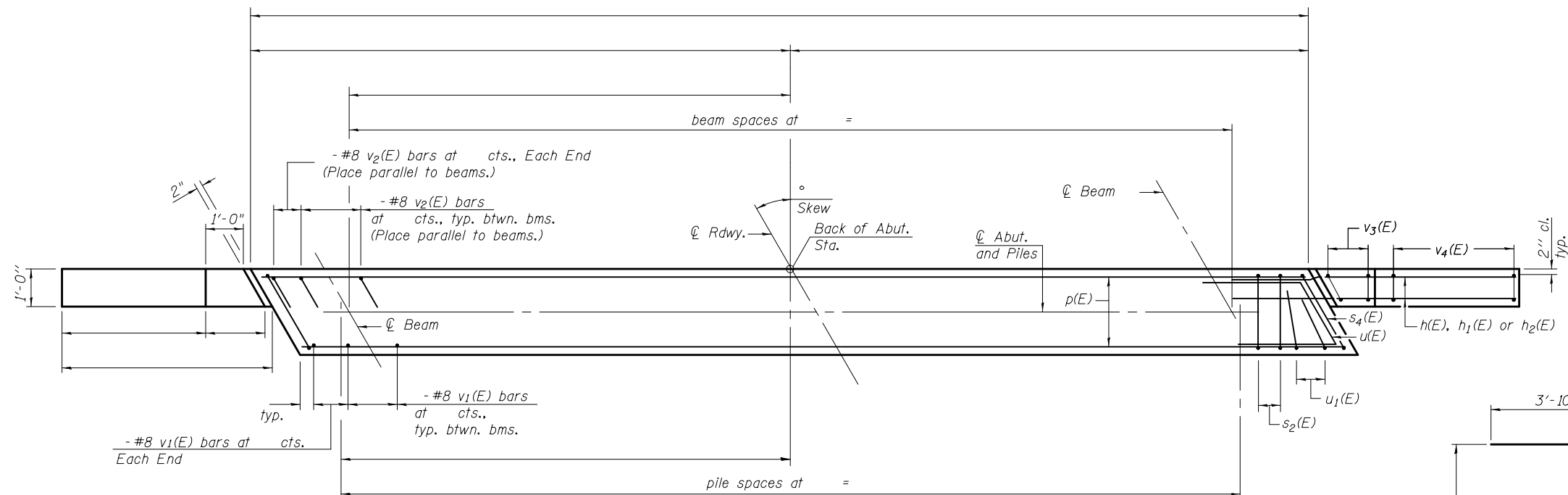
8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -								
	ILLINOIS FED. AID PROJECT										

Notes:
Pour steps monolithically with cap.



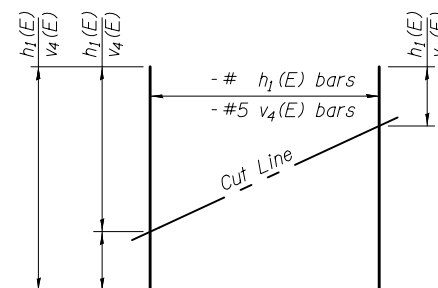
ELEVATION



PLAN

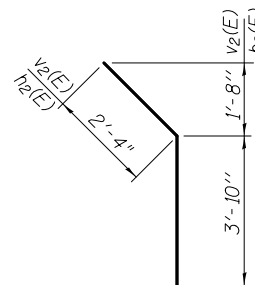
PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

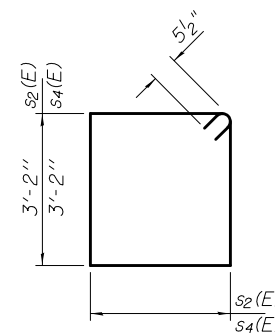


FIELD CUTTING DIAGRAM

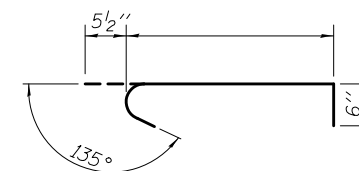
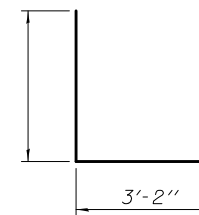
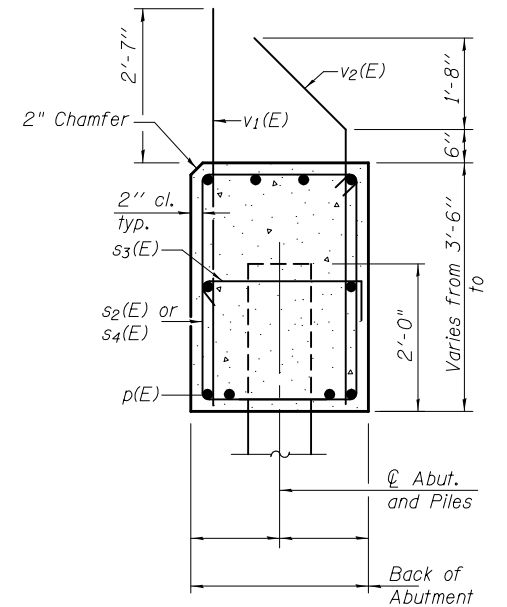
Order $h_1(E)$ and $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $v_2(E)$ & $h_2(E)$



BAR $s_2(E)$ & $s_4(E)$


$$\underline{BAR} \ s_3(E)$$

$$\underline{BAR} \ u_1(E)$$


SEC. THRU ABUT.

Dimensions at right angles to abutment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		————
$h_1(E)$		#		————
$h_2(E)$	4	#5		————┐
$p(E)$		#		————
$s_2(E)$		#5		┐
$s_3(E)$		#5		┐┐
$s_4(E)$		#5		┐
$u(E)$	8	#6		————┐
$u_1(E)$		#5		————┐
$v_1(E)$		#8	5'-11"	————
$v_2(E)$		#8	6'-2"	————┐
$v_3(E)$		#5		————
$v_4(E)$		#5		————
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

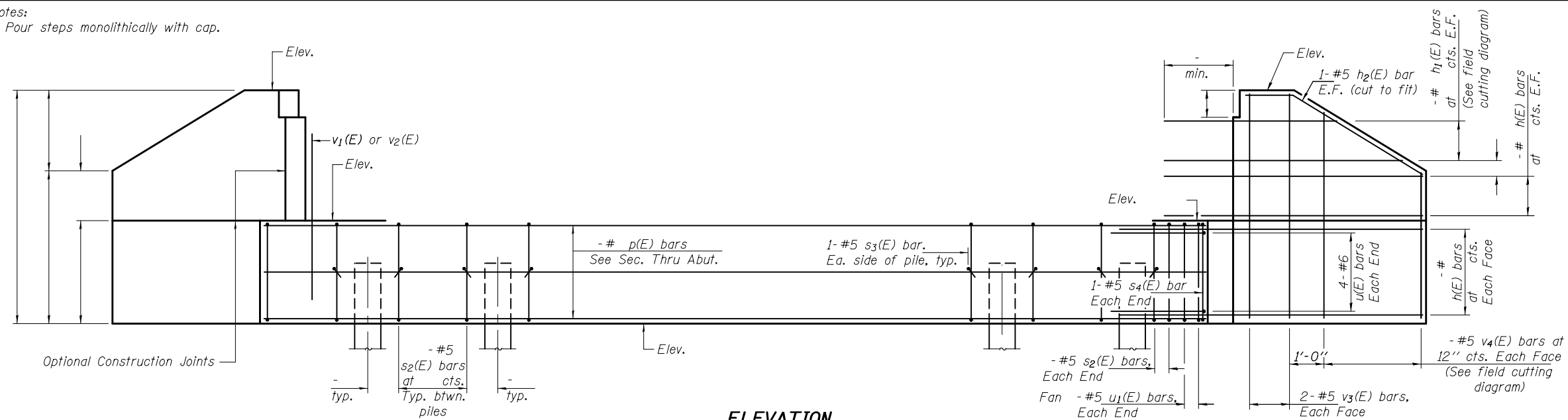
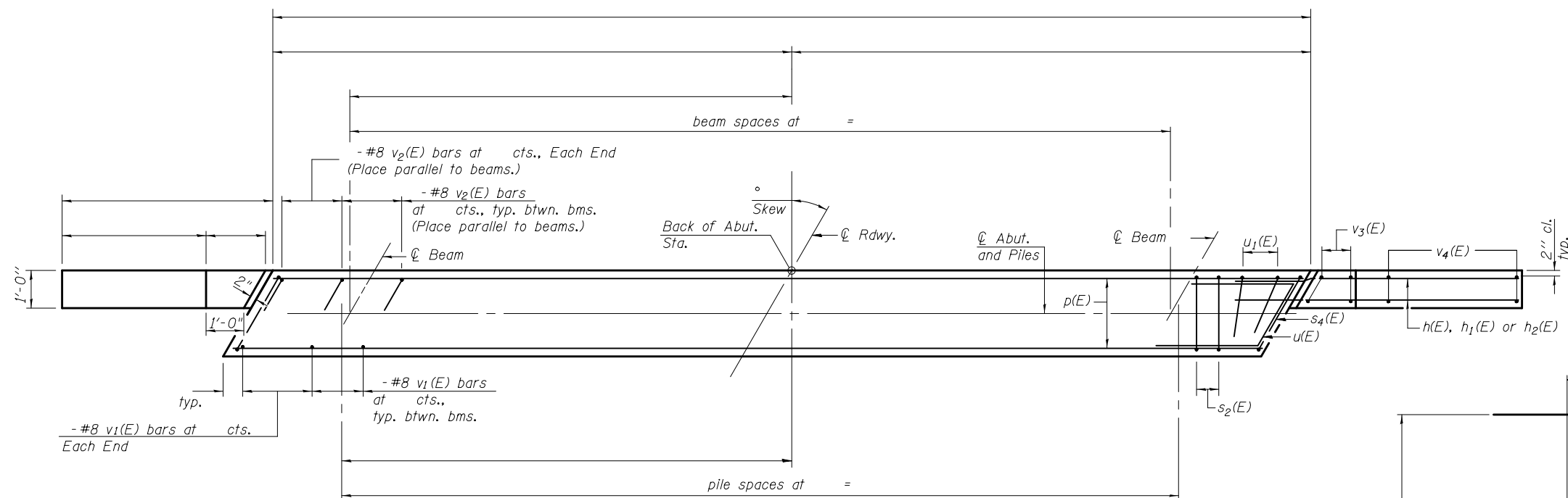
For details of piles see sheet of .

AI-2440-L

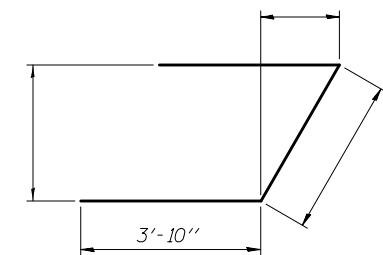
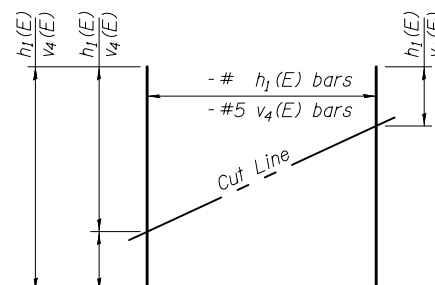
8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -								
	ILLINOIS FED. AID PROJECT										

Notes:
Pour steps monolithically with cap.

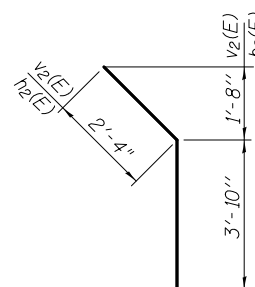
ELEVATION

PLAN

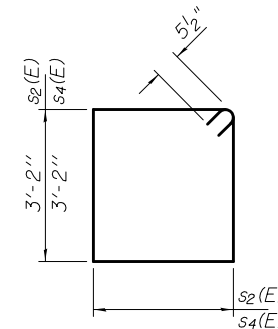

$$\underline{BAR \ u(E)}$$


FIELD CUTTING DIAGRAM

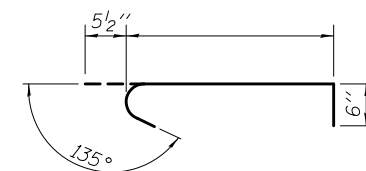
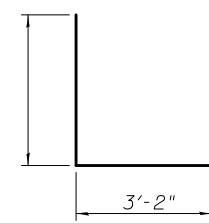
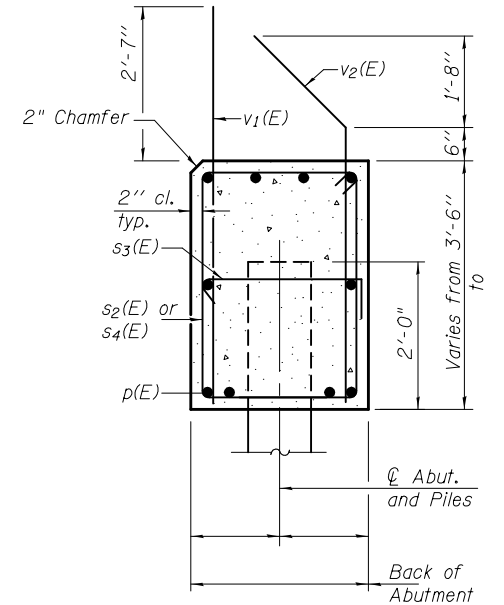
Order $h_1(E)$ and $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $v_2(E)$ & $h_2(E)$



BAR $s_2(E)$ & $s_4(E)$


$$\underline{BAR} \ s_3(E)$$

$$\underline{BAR} \ u_1(E)$$


SEC. THRU ABUT.

Dimensions at right angles to abutment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$		#		_____
$h_2(E)$	4	#5		_____ ↗
$p(E)$		#		_____
$s_2(E)$		#5		□
$s_3(E)$		#5		┌┐
$s_4(E)$		#5		□
$u(E)$	8	#6		└┐
$u_1(E)$		#5		└┐
$v_1(E)$		#8	5'-11"	_____
$v_2(E)$		#8	6'-2"	_____ ↗
$v_3(E)$		#5		_____
$v_4(E)$		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

For details of piles see sheet of .

PILE DATA

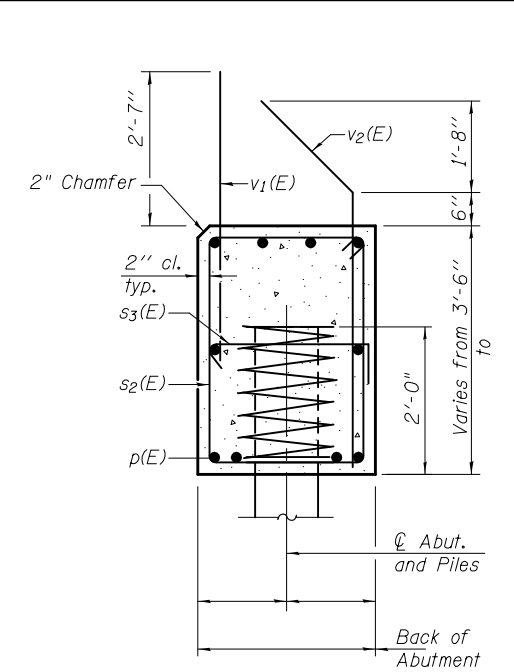
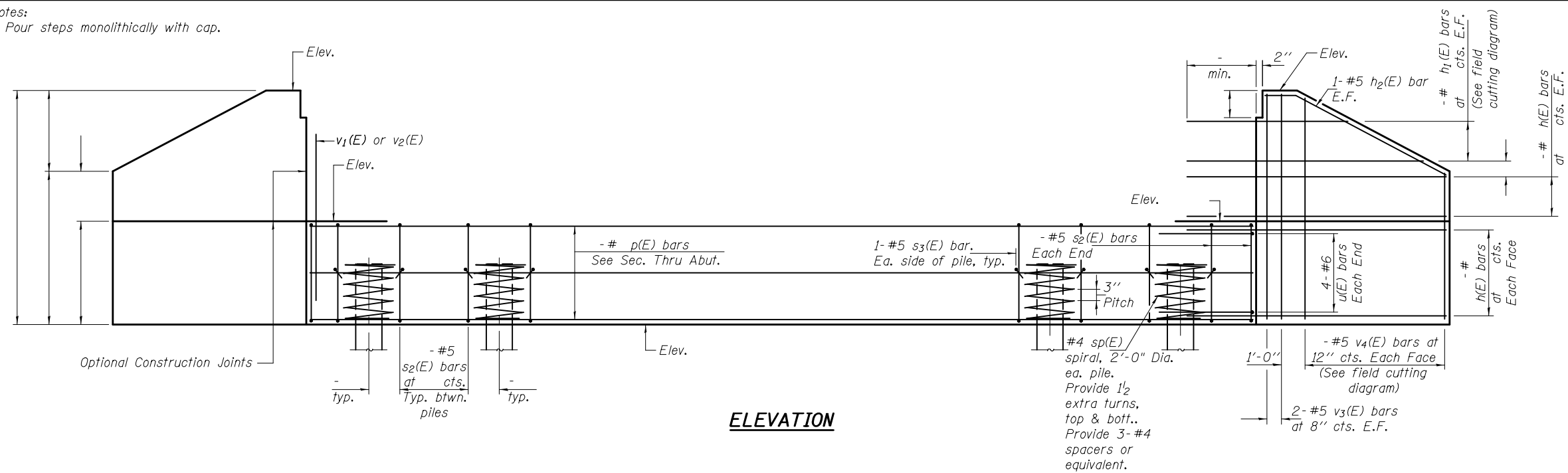
Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

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8-31-12




FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
						CONTRACT NO.				
TITL INOTS FFD. AID PROJCT										

Notes:
Pour steps monolithically with cap.

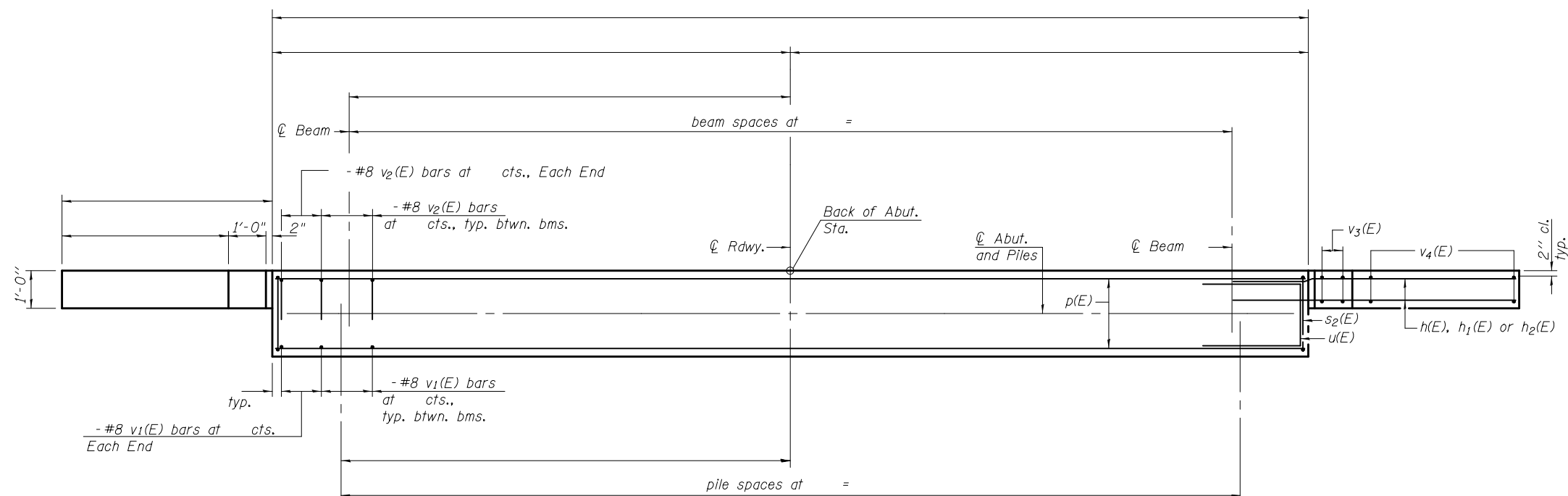


SEC. THRU ABUT.

BILL OF MATERIAL

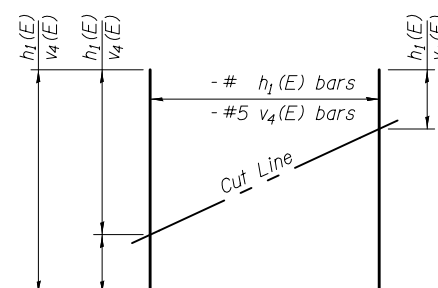
Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$		#		_____
$h_2(E)$	4	#5		_____ /
$p(E)$		#		_____
$s_2(E)$		#5		
$s_3(E)$		#5		
* $sp(E)$		#4	2'-0"	MMMM
$u(E)$	8	#6		
$v_1(E)$		#8	5'-11"	_____
$v_2(E)$		#8	6'-2"	_____ /
$v_3(E)$		#5		_____
$v_4(E)$		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

* Length is height of spiral.
For details of piles see sheet of .



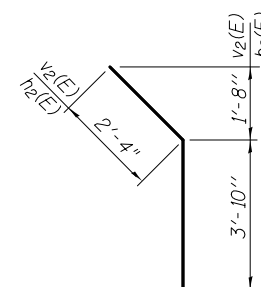
PILE DATA

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

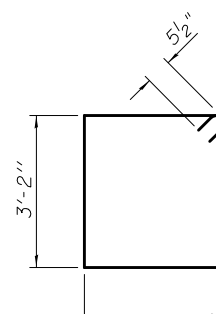
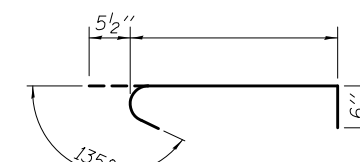
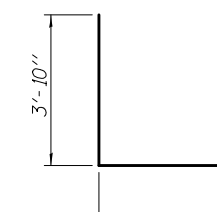


FIELD CUTTING DIAGRAM

Order $h_1(E)$ and $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $v_2(E)$ & $h_2(E)$


$$BAR \ s_2(E)$$
 $BAR \ s_3(E)$ 

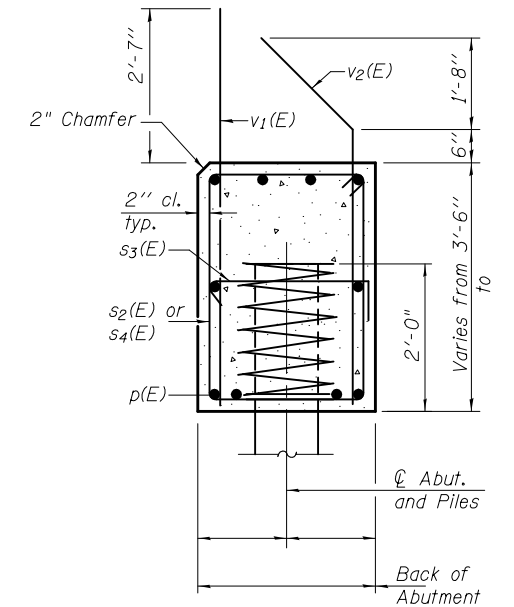
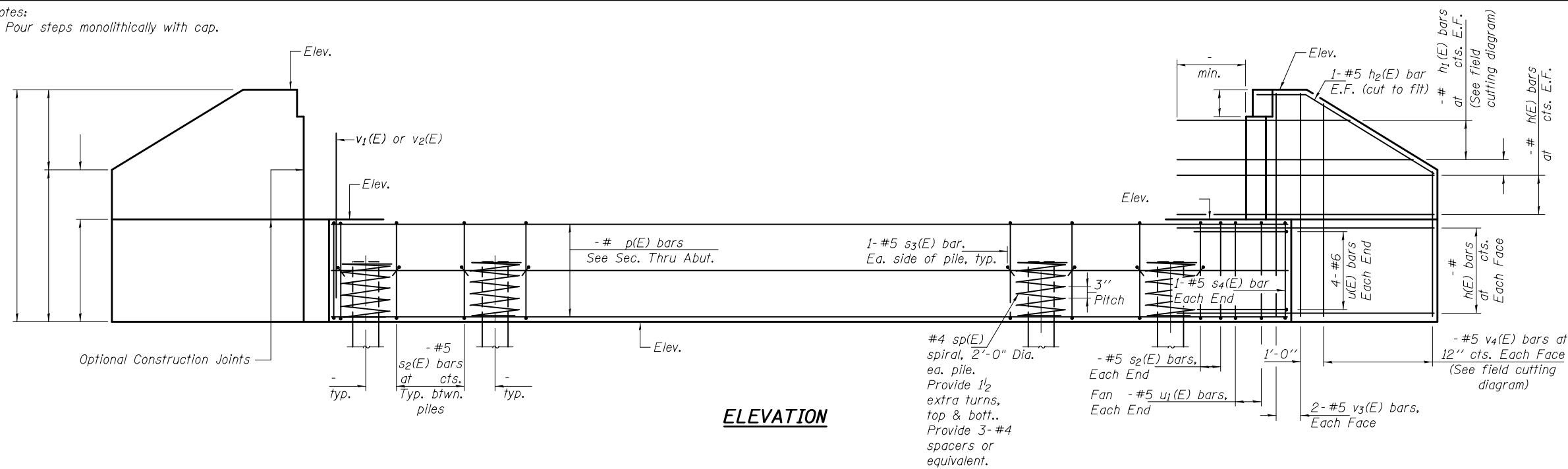
BAR $u(E)$

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8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
						CONTRACT NO.				
						TITL INOTS FFD. AID PROJCT				






Notes:
Pour steps monolithically with cap.



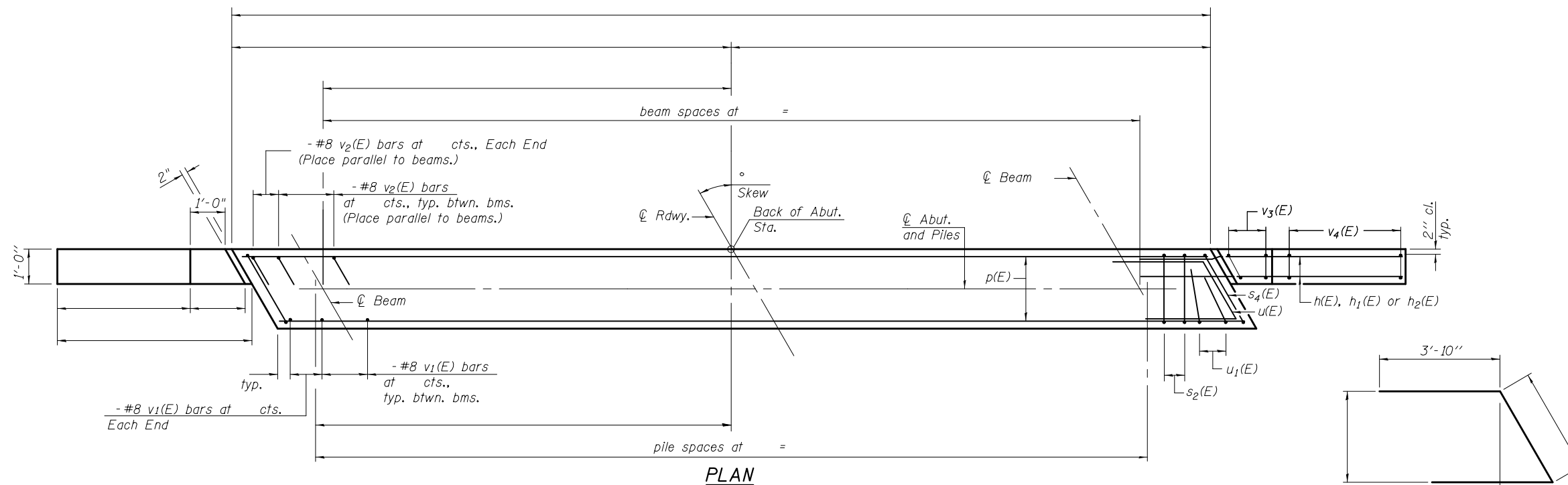
SEC. THRU ABUT.

Dimensions at right angles to abutment.

BILL OF MATERIAL

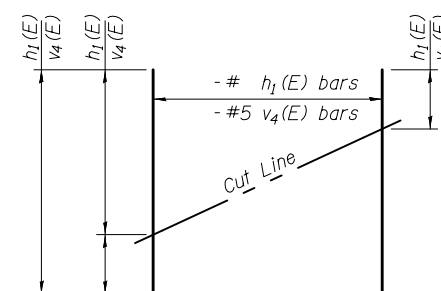
Bar	No.	Size	Length	Shape
$h(E)$		#		————
$h_1(E)$		#		————
$h_2(E)$	4	#5		———— ————
$p(E)$		#		————
$s_2(E)$		#5		
$s_3(E)$		#5		
$s_4(E)$		#5		
* $sp(E)$		#4	2'-0"	WWW
$u(E)$	8	#6		
$u_1(E)$		#5		
$v_1(E)$		#8	5'-11"	————
$v_2(E)$		#8	6'-2"	———— ————
$v_3(E)$		#5		————
$v_4(E)$		#5		————
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

* Length is height of spiral.
For details of piles see sheet of .



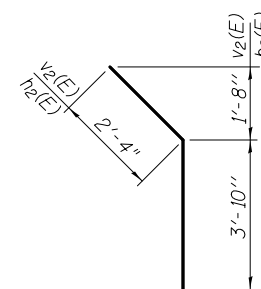
PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

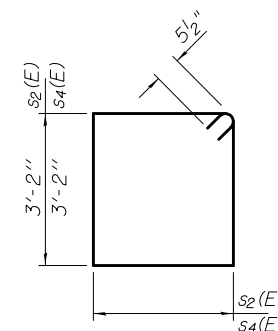


FIELD CUTTING DIAGRAM

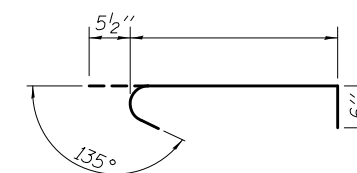
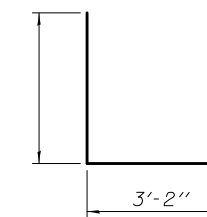
Order $h_1(E)$ and $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $v_2(E)$ & $h_2(E)$



BAR $s_2(E)$ & $s_4(E)$

 $BAR \ s_3(E)$ 

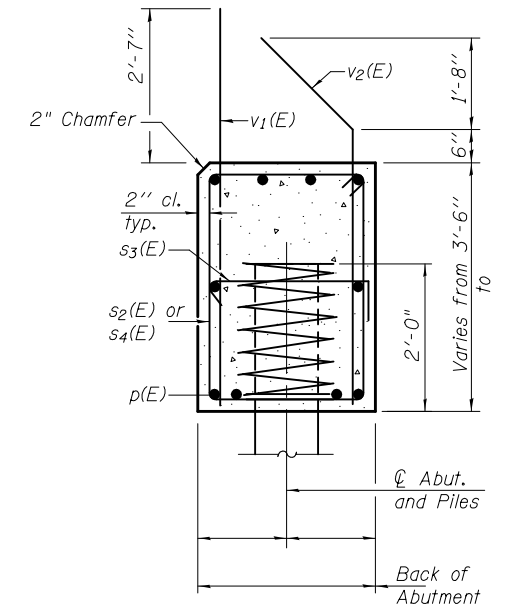
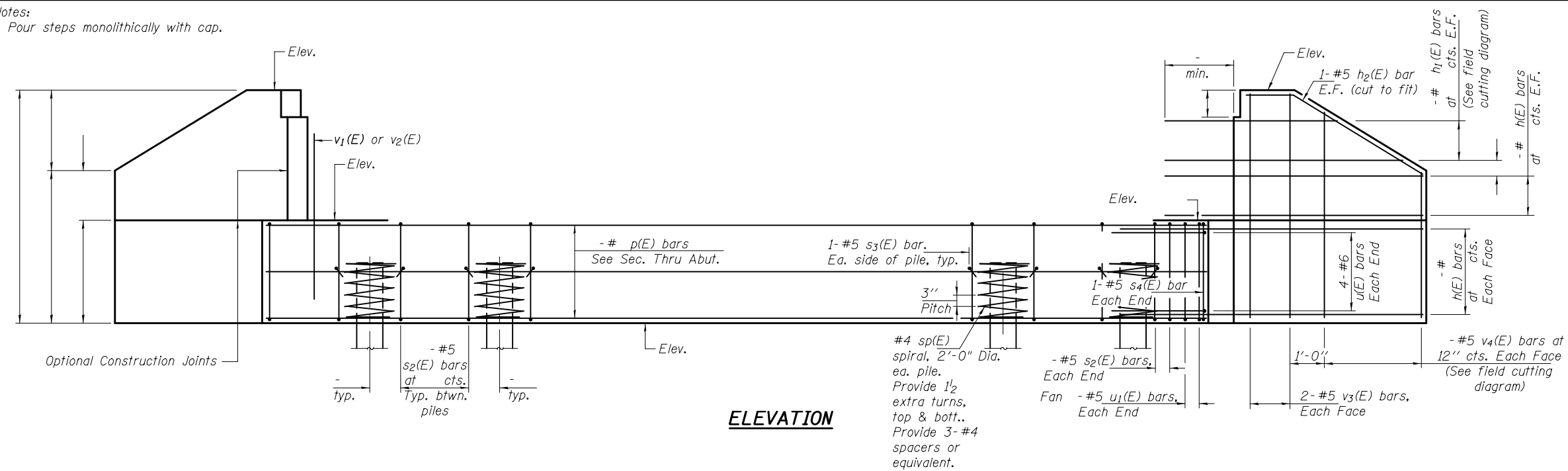
BAR $u_1(E)$

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8-31-12

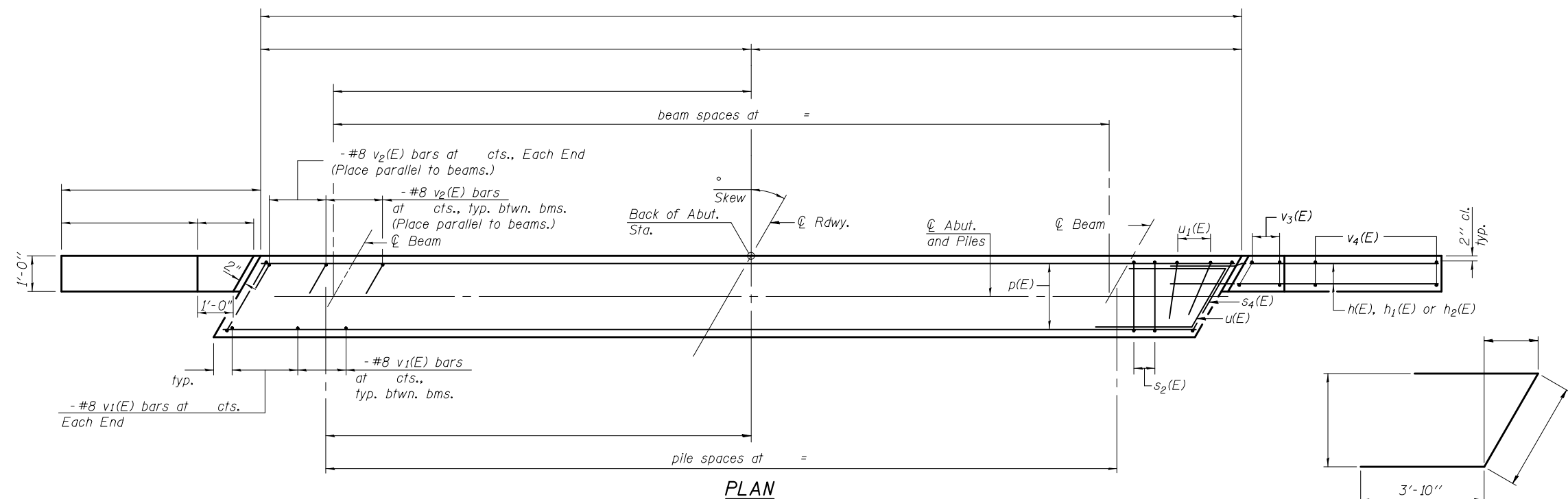
FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -								
	ILLINOIS FED. AID PROJECT										

Notes:
Pour steps monolithically with cap.



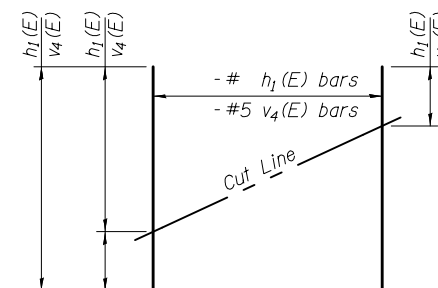
SEC. THRU ABUT.

Dimensions at right angles to abutment.


$$\underline{BAR \ u(E)}$$

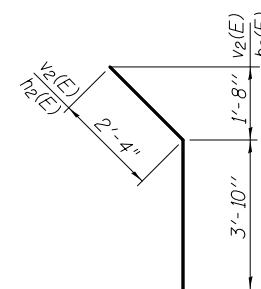
PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

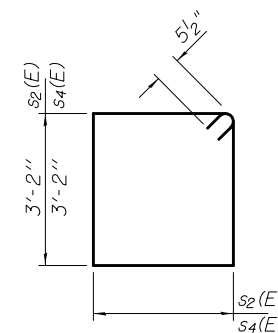


FIELD CUTTING DIAGRAM

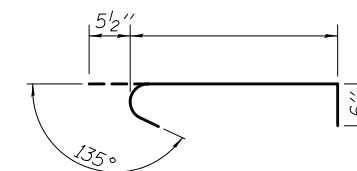
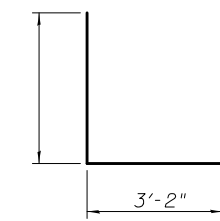
Order $h_1(E)$ and $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.
















BAR $v_2(E)$ & $h_2(E)$



BAR $s_2(E)$ & $s_4(E)$


$$\underline{BAR} \ s_3(E)$$


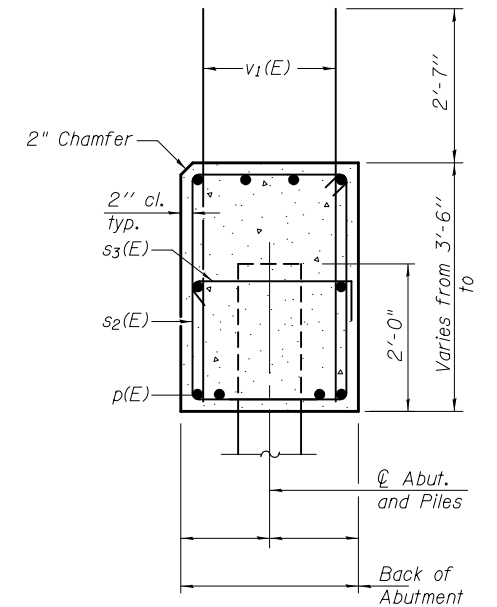
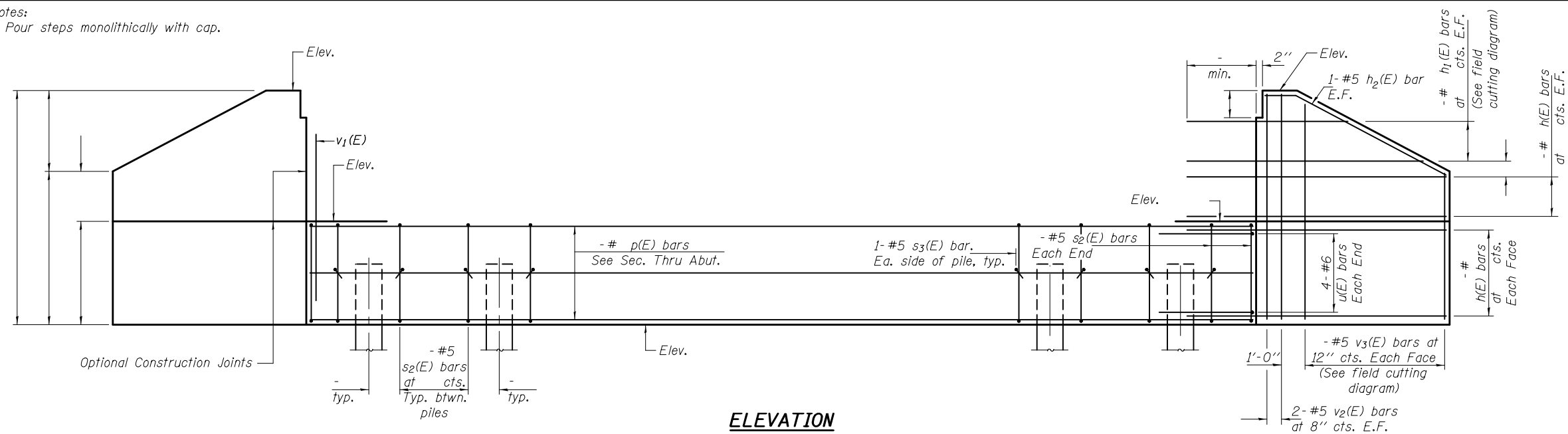
BAR $u_1(E)$

Bar	No.	Size	Length	Shape
$h(E)$		#		
$h_1(E)$		#		
$h_2(E)$	4	#5		
$p(E)$		#		
$s_2(E)$		#5		
$s_3(E)$		#5		
$s_4(E)$		#5		
$sp(E)$		#4	2'-0"	MMM
$u(E)$	8	#6		
$u_1(E)$		#5		
$v_1(E)$		#8	5'-11"	
$v_2(E)$		#8	6'-2"	
$v_3(E)$		#5		
$v_4(E)$		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

*Length is height of spiral.
For details of piles see sheet of .




FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
						CONTRACT NO.				
						ILLINOIS FED. AID PROJECT				

Notes:
Pour steps monolithically with cap.

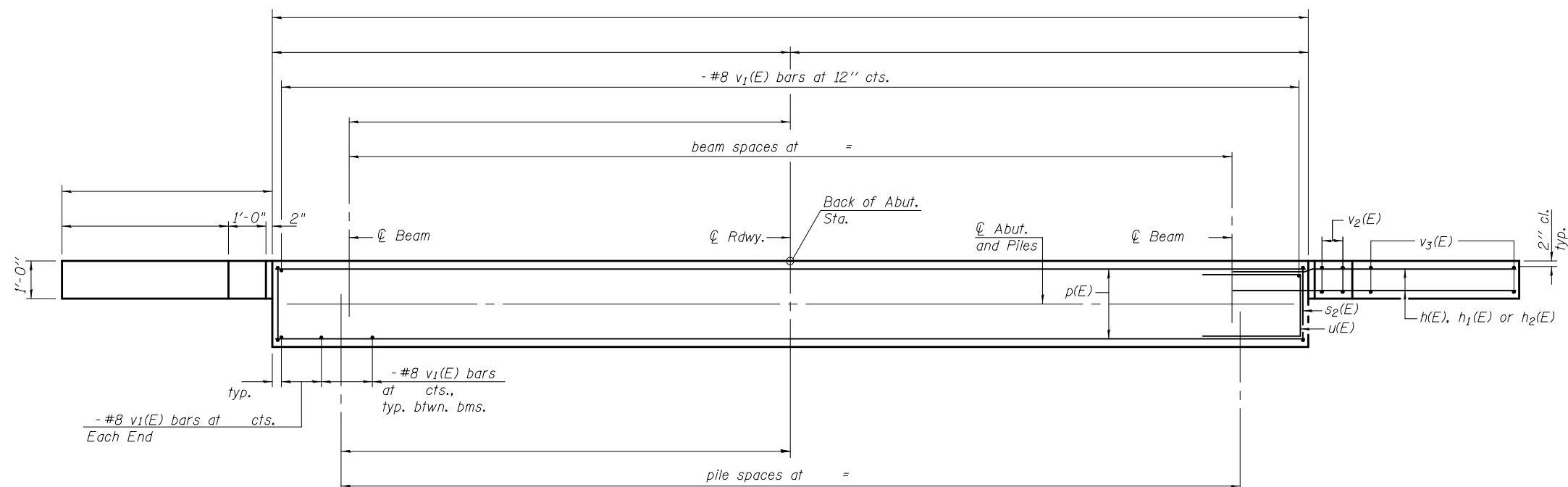


SEC. THRU ABUT.

BILL OF MATERIAL

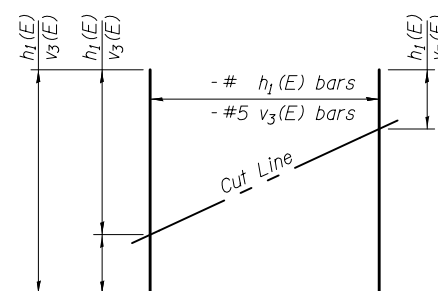
Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$		#		_____
$h_2(E)$	4	#5		_____
$p(E)$		#		_____
$s_2(E)$		#5		
$s_3(E)$		#5		
$u(E)$	8	#6		
$v_1(E)$		#8	5'-11"	_____
$v_2(E)$		#5		_____
$v_3(E)$		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

For details of piles see sheet of .



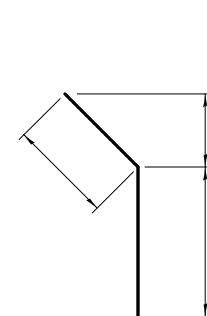
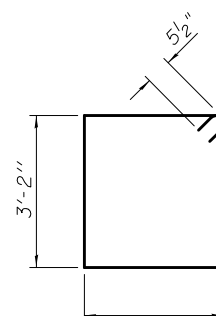
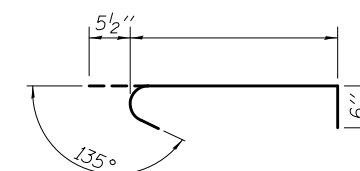
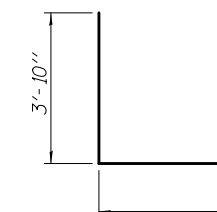
PILE DATA

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____



FIELD CUTTING DIAGRAM

Order $h_1(E)$ and $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.

 $BAR \ h_2(E)$  $BAR \ s_2(E)$  $BAR \ s_3(E)$ 

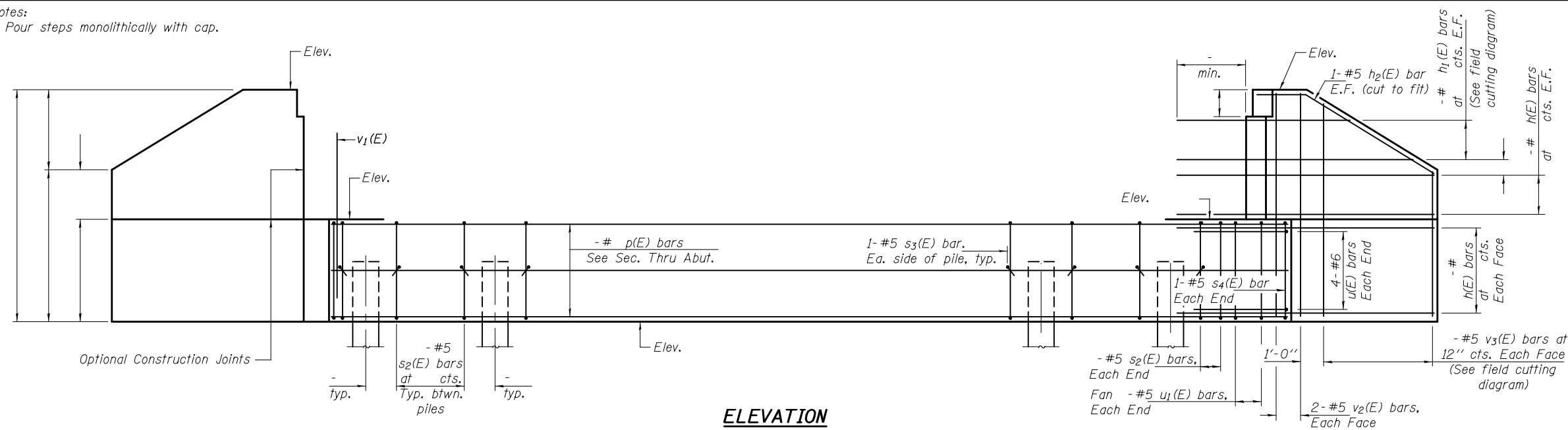
BAR $u(E)$

AI->40-0

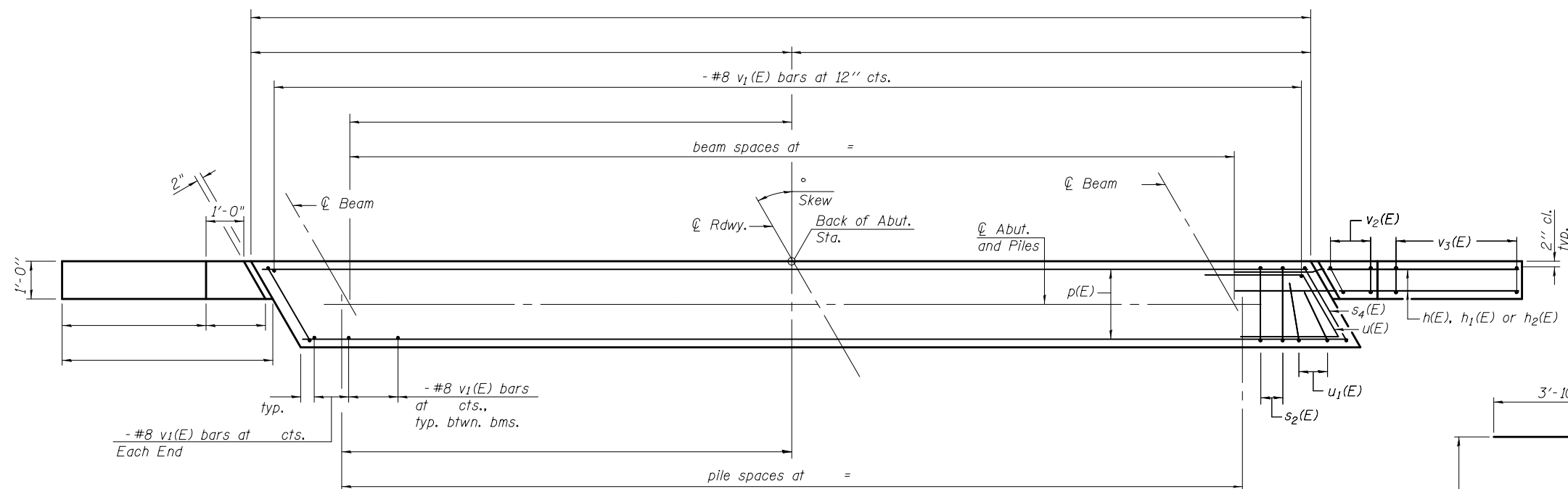
8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
						CONTRACT NO.				
					TITL INOTS FFD. AID PROJCT					

Notes:
Pour steps monolithically with cap.



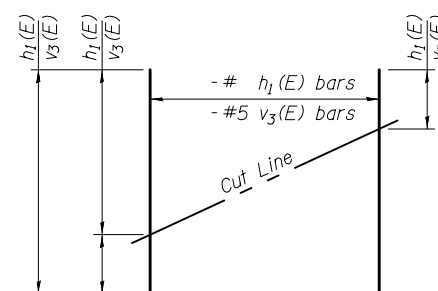
ELEVATION



PLAN

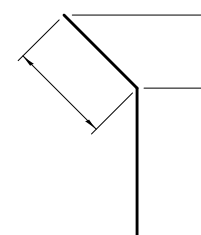
PILE DATA

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

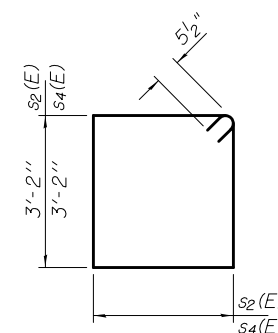


FIELD CUTTING DIAGRAM

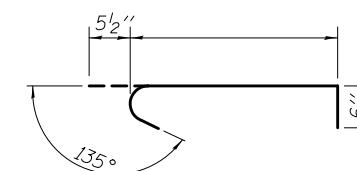
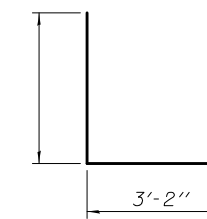
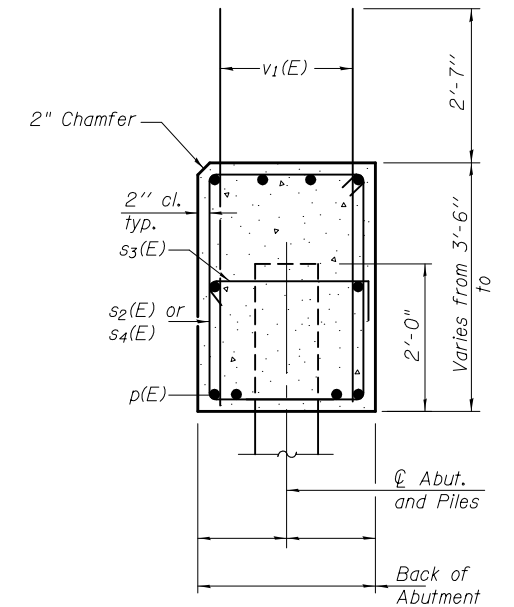
Order $h_1(E)$ and $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $h_2(E)$








BAR $s_2(E)$ & $s_4(E)$

 $BAR \ s_3(E)$ 
$$\underline{BAR} \ u_1(E)$$


SEC. THRU ABUT.

Dimensions at right angles to abutment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		————
$h_1(E)$		#		————
$h_2(E)$	4	#5		————┘
$p(E)$		#		————
$s_2(E)$		#5		
$s_3(E)$		#5		
$s_4(E)$		#5		
$u(E)$	8	#6		
$u_1(E)$		#5		
$v_1(E)$		#8	5'-11''	————
$v_2(E)$		#5		————
$v_3(E)$		#5		————
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

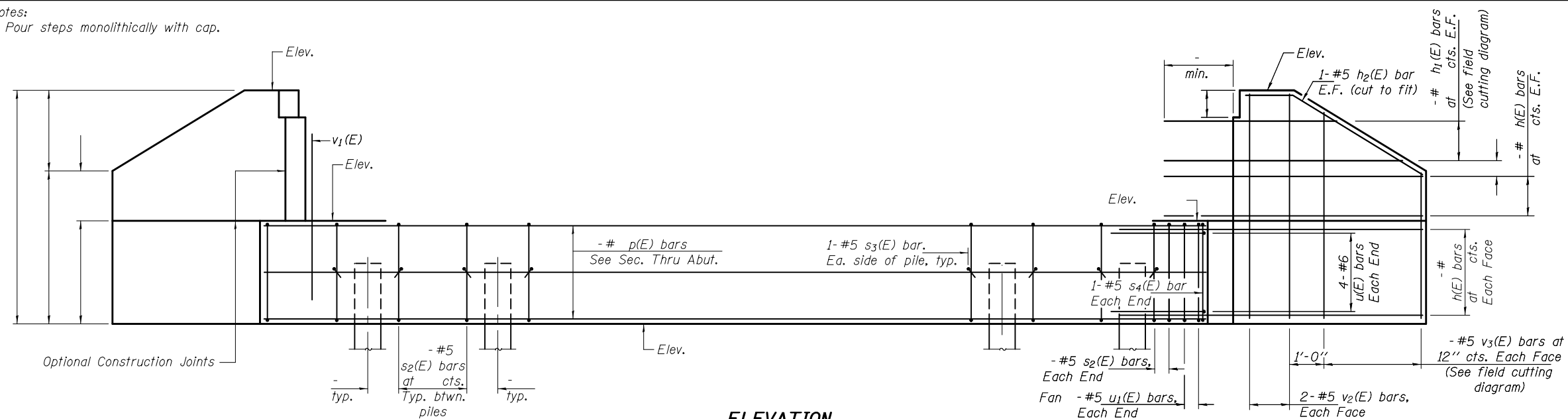
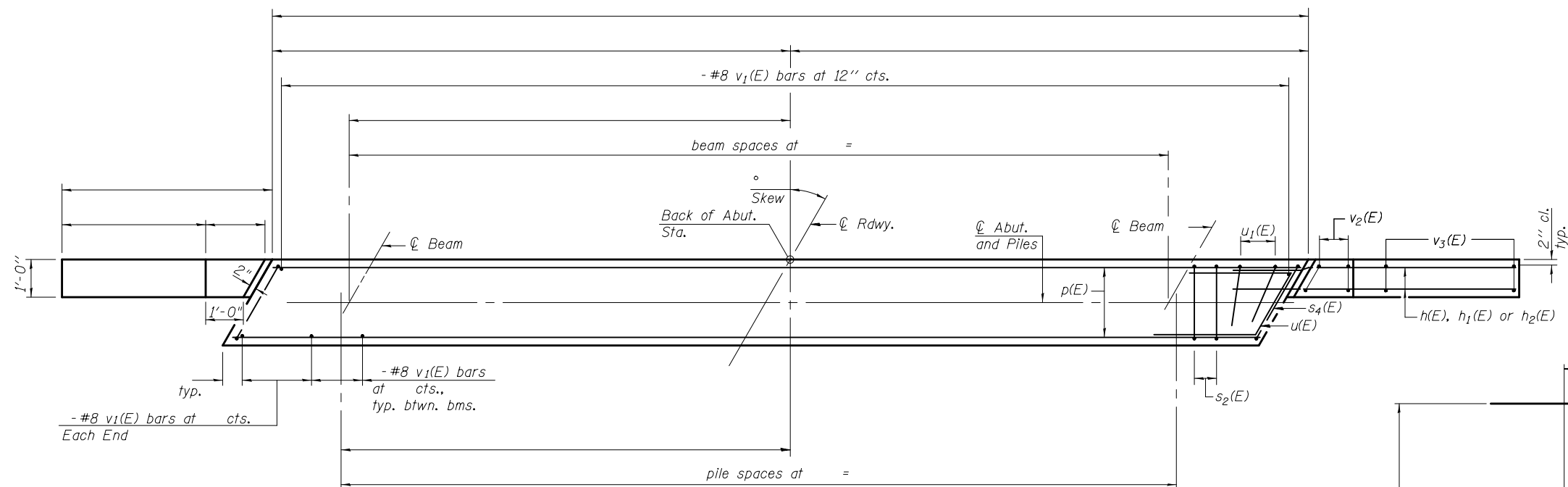
For details of piles see sheet of .

AI->40-L

8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.				
	PLOT DATE =	CHECKED -	REVISED -							
						TITL INOTS FFD. AID PROJCT				

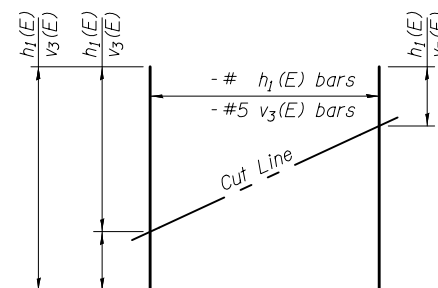
Notes:
Pour steps monolithically with cap.

ELEVATION

PLAN

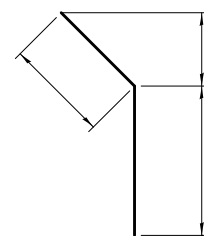
PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

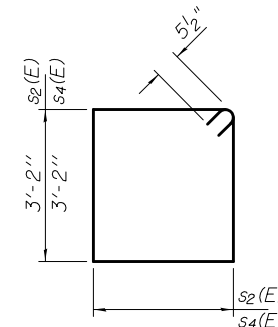


FIELD CUTTING DIAGRAM

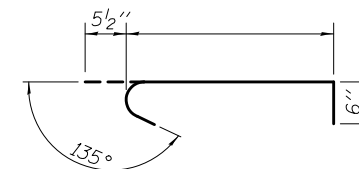
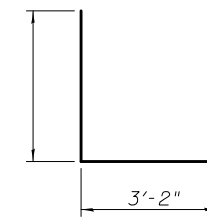
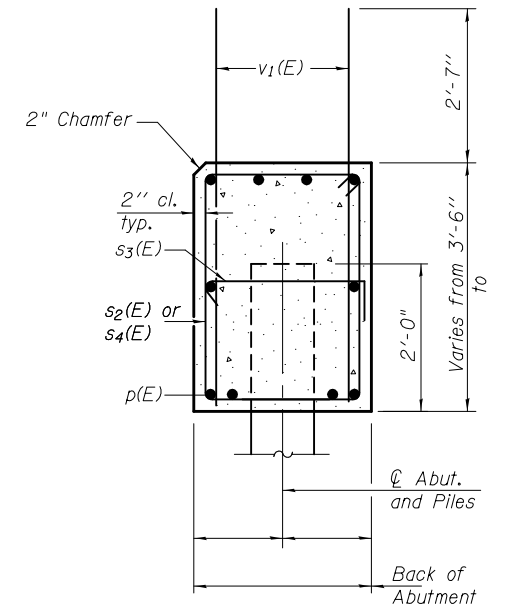
Order $h_1(E)$ and $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $h_2(E)$



BAR $s_2(E)$ & $s_4(E)$

 $BAR \ s_3(E)$ 
$$\underline{BAR} \ u_1(E)$$


SEC. THRU ABUT.

Dimensions at right angles to abutment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		————
$h_1(E)$		#		————
$h_2(E)$	4	#5		————┐
$p(E)$		#		————
$s_2(E)$		#5		┐
$s_3(E)$		#5		┐
$s_4(E)$		#5		┐
$u(E)$	8	#6		┐
$u_1(E)$		#5		┐
$v_1(E)$		#8	5'-11"	————
$v_2(E)$		#5		————
$v_3(E)$		#5		————
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

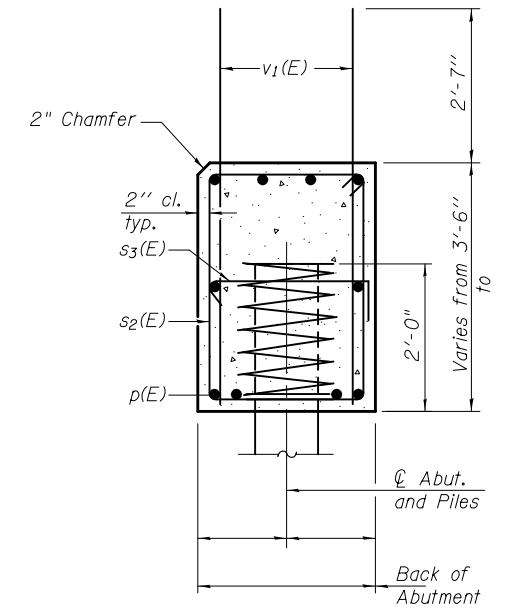
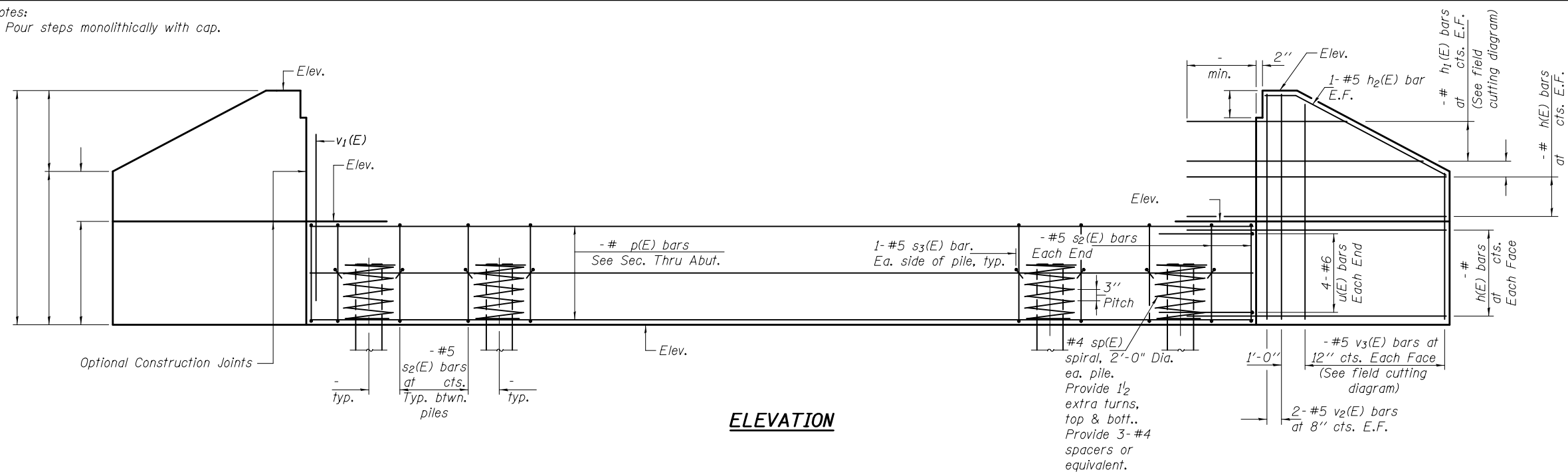
For details of piles see sheet of .

AI->40-R

8-31-12




FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.				
	PLOT DATE =	CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT				

Notes:
Pour steps monolithically with cap.

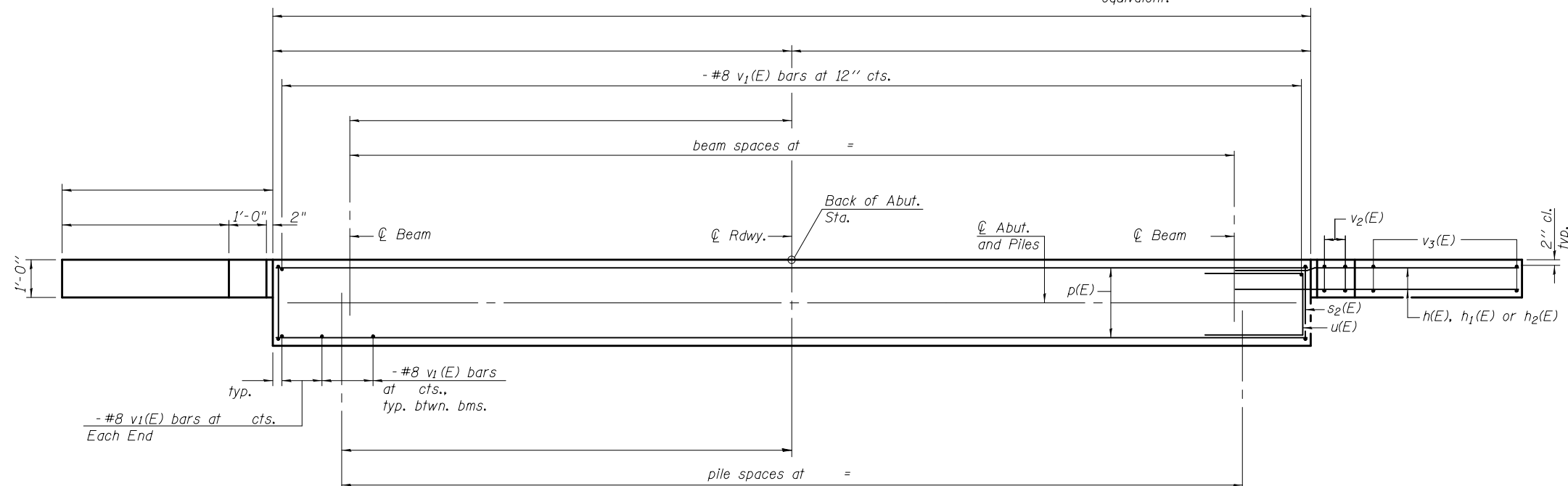


SEC. THRU ABUT.

BILL OF MATERIAL

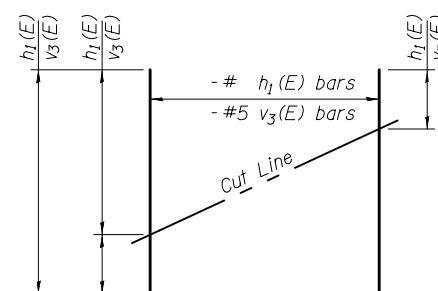
Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$		#		_____
$h_2(E)$	4	#5		_____ /
$p(E)$		#		_____
$s_2(E)$		#5		
$s_3(E)$		#5		
* $sp(E)$		#4	2'-0"	MMMM
$u(E)$	8	#6		
$v_1(E)$		#8	5'-11"	_____
$v_2(E)$		#5		_____
$v_3(E)$		#5		_____
<i>Structure Excavation</i>			<i>Cu. Yd.</i>	
<i>Concrete Structures</i>			<i>Cu. Yd.</i>	
<i>Reinforcement Bars,</i>			<i>Pound</i>	
<i>Epoxy Coated</i>				
<i>Furnishing - Piles,</i>			<i>Foot</i>	
<i>Driving Piles</i>			<i>Foot</i>	
<i>Test Pile,</i>			<i>Each</i>	

* Length is height of spiral.
For details of piles see sheet of .



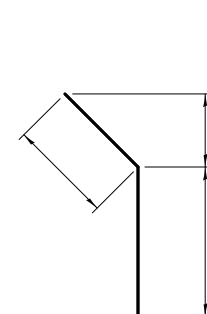
PILE DATA

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

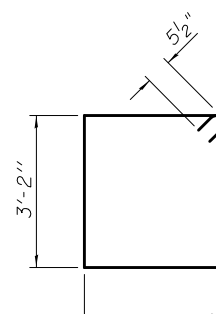
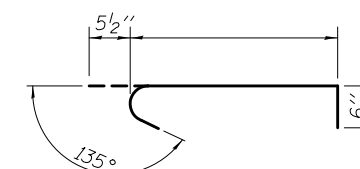
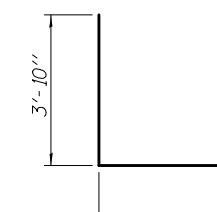


FIELD CUTTING DIAGRAM

Order $h_1(E)$ and $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $h_2(E)$


$$\underline{BAR \ s_2(E)}$$

$$\underline{BAR} \ s_3(E)$$


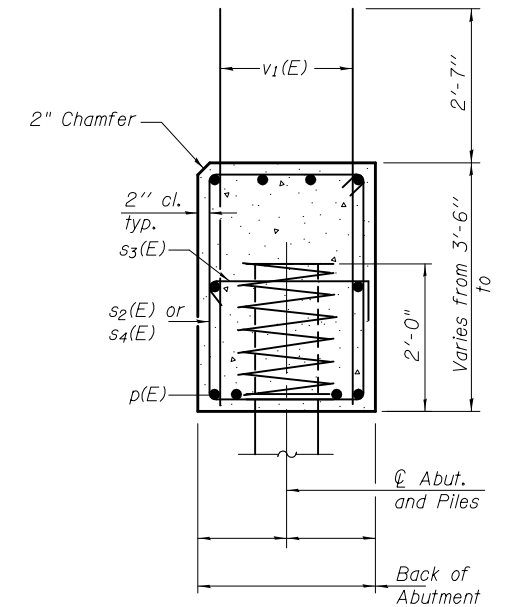
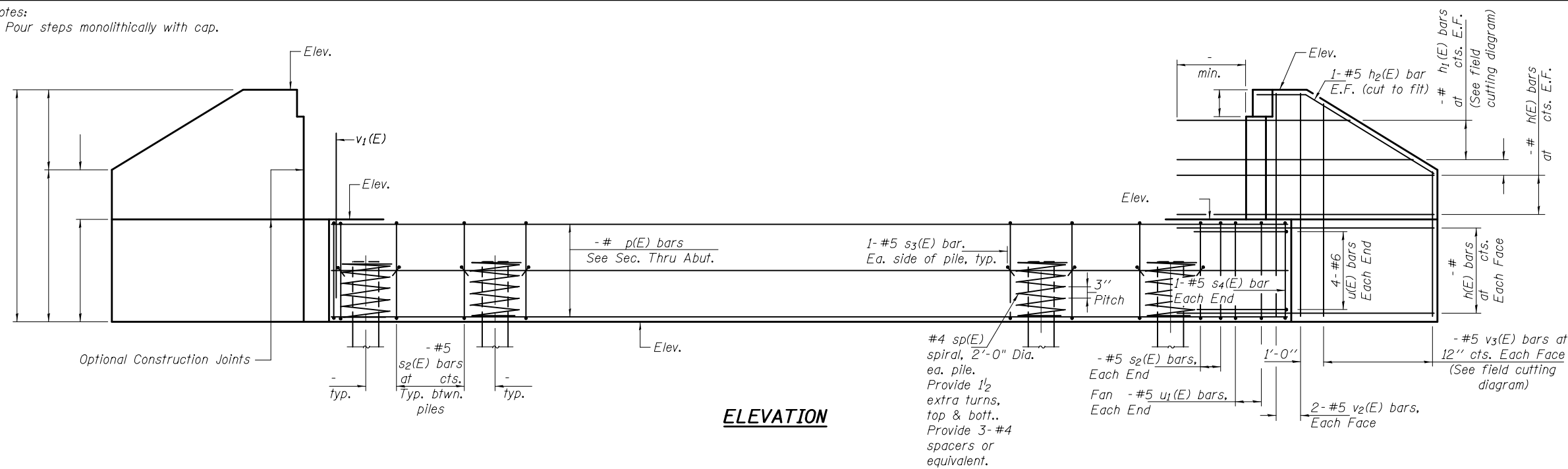
BAR $u(E)$

AI->40S-0

8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
						CONTRACT NO.				
					TITL INOTS FFD. AID. PROJCT					






Notes:
Pour steps monolithically with cap.



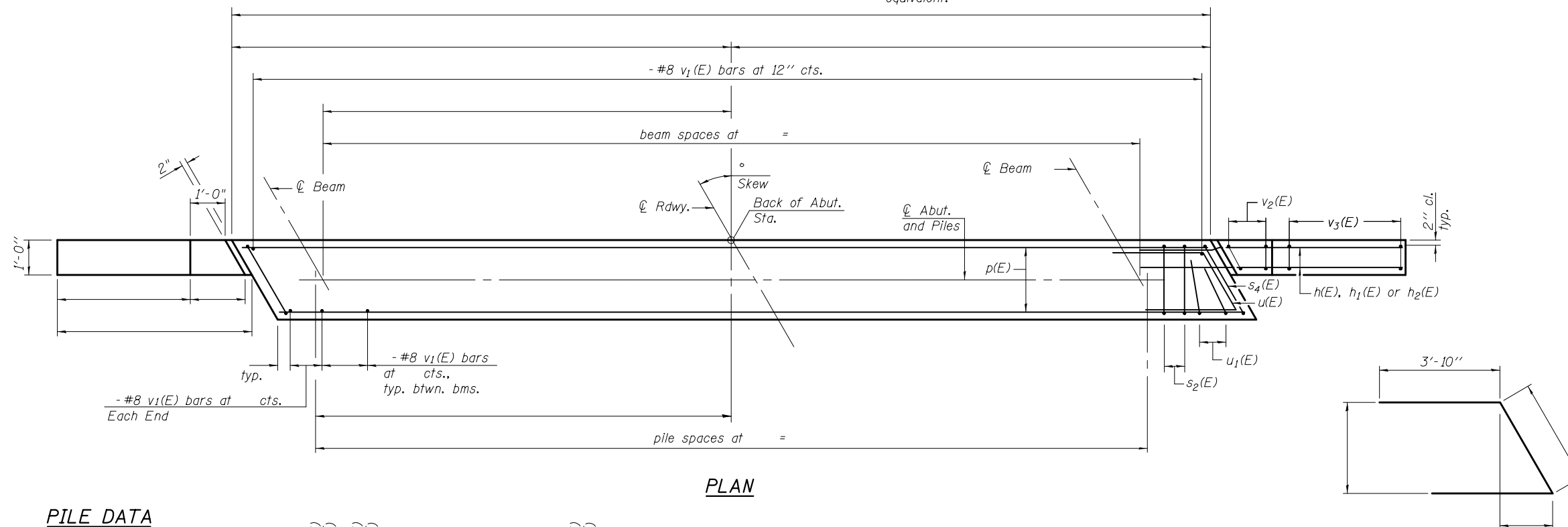
SEC. THRU ABUT.

Dimensions at right angles to abutment.

BILL OF MATERIAL

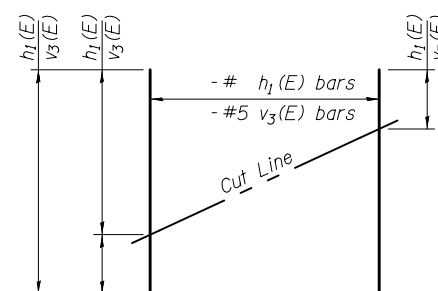
Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$		#		_____
$h_2(E)$	4	#5		_____
$p(E)$		#		_____
$s_2(E)$		#5		
$s_3(E)$		#5		
$s_4(E)$		#5		
* $sp(E)$		#4	2'-0"	MMM
$u(E)$	8	#6		
$u_1(E)$		#5		
$v_1(E)$		#8	5'-11"	_____
$v_2(E)$		#5		_____
$v_3(E)$		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

* Length is height of spiral.
For details of piles see sheet of .



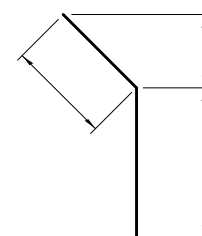
PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

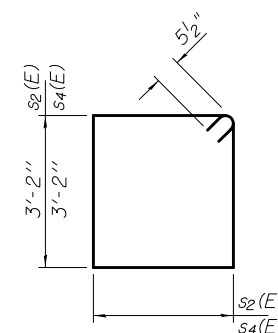


FIELD CUTTING DIAGRAM

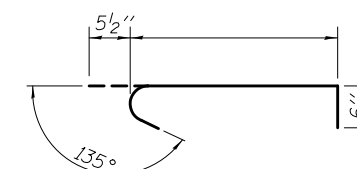
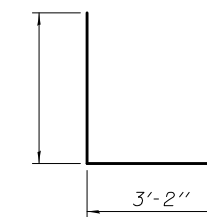
Order $h_1(E)$ and $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.



BAR $h_2(E)$



BAR $s_2(E)$ & $s_4(E)$


$$\underline{BAR} \ s_3(E)$$


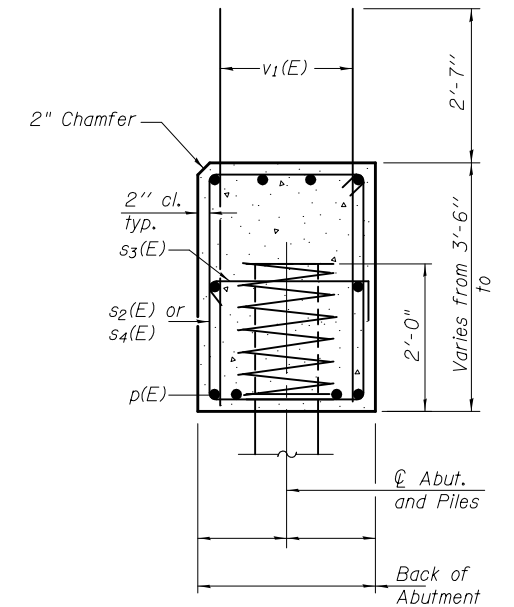
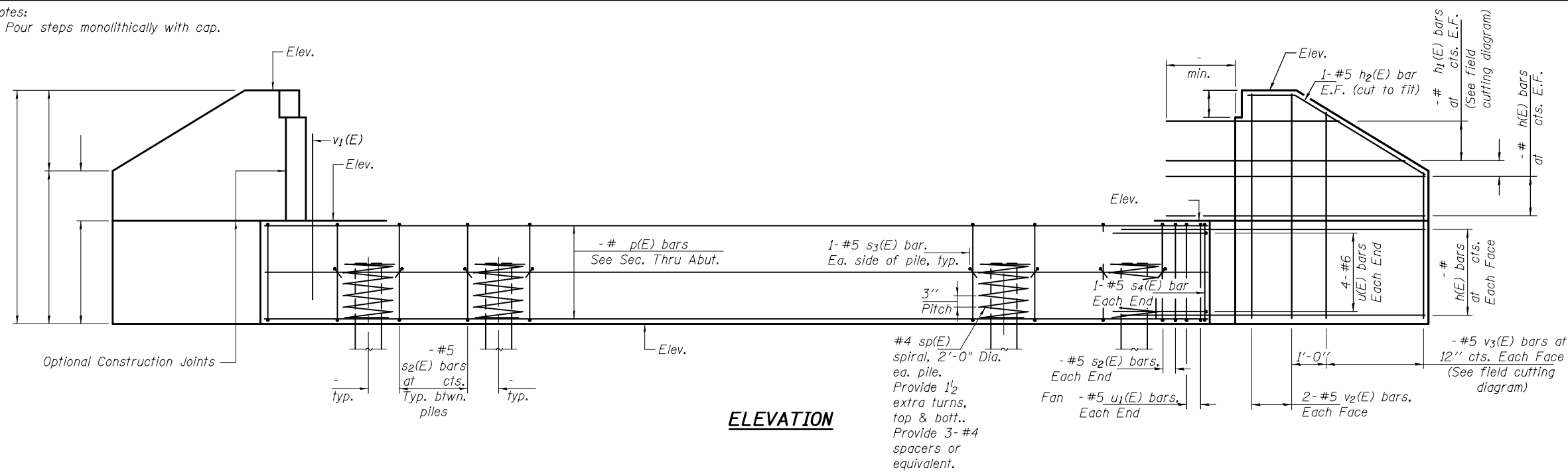
BAR $u_1(E)$

AI->40S-L

8-31-12

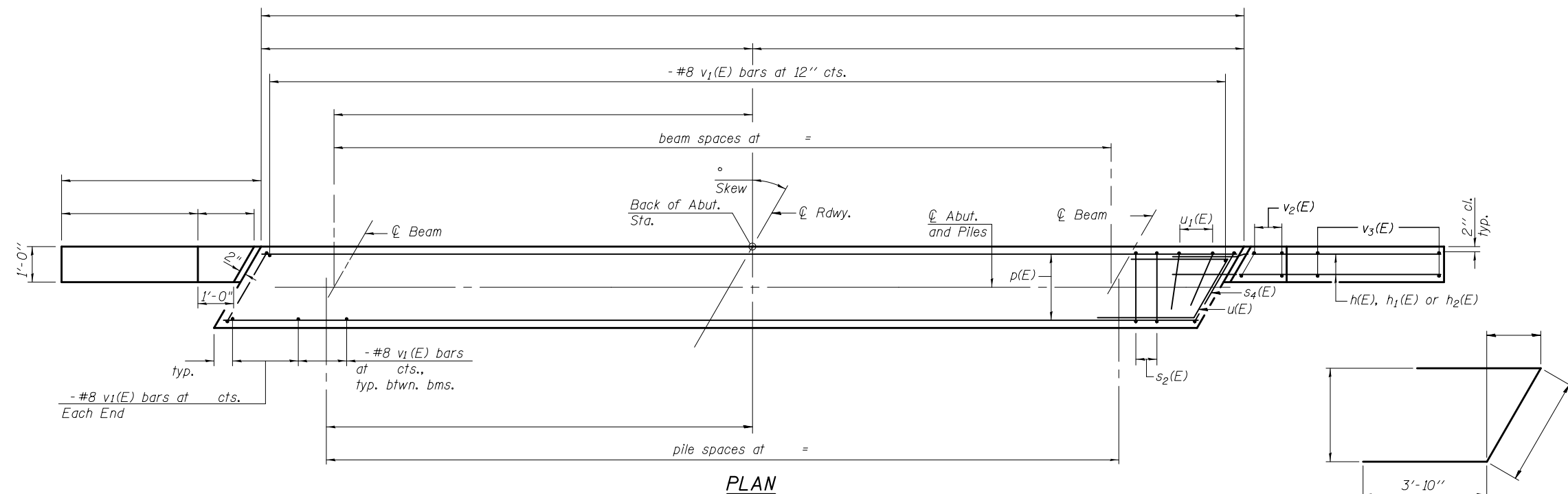
FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
						CONTRACT NO.				
TITL INOTS FFD. AID PROJCT										

Notes:
Pour steps monolithically with cap.



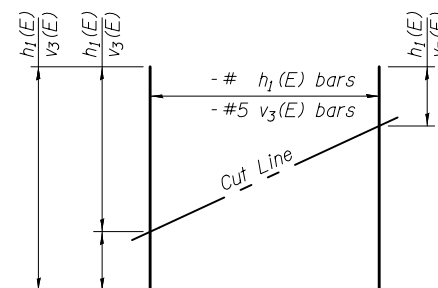
SEC. THRU ABUT.

Dimensions at right angles to abutment.


$$\underline{BAR} \ u(E)$$

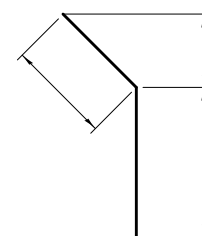
PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

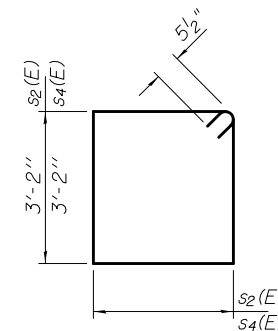


FIELD CUTTING DIAGRAM

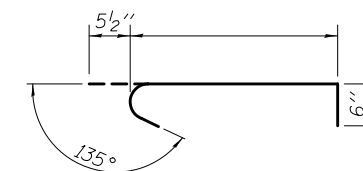
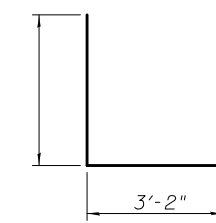
Order $h_1(E)$ and $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.
















BAR $h_2(E)$



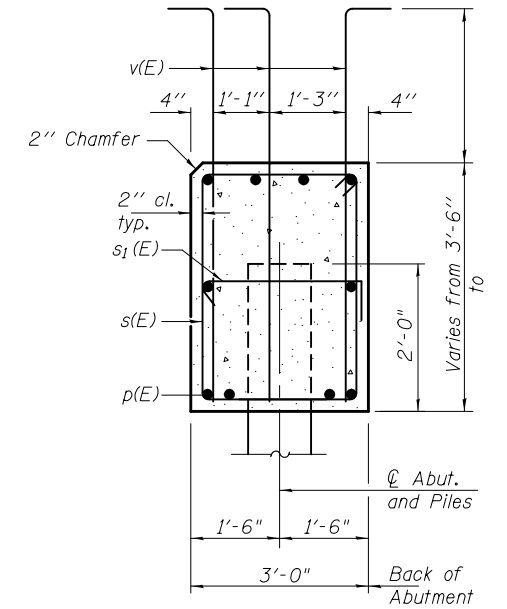
BAR $s_2(E)$ & $s_4(E)$


$$\underline{BAR} \ s_3(E)$$

$$BAR \ u_1(E)$$

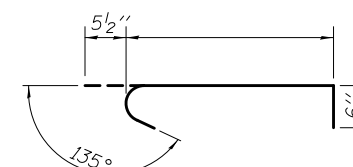
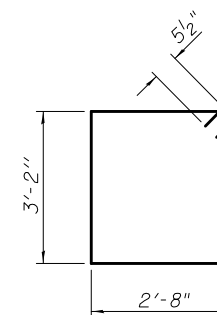
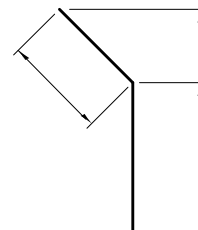
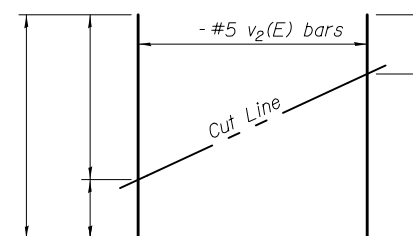
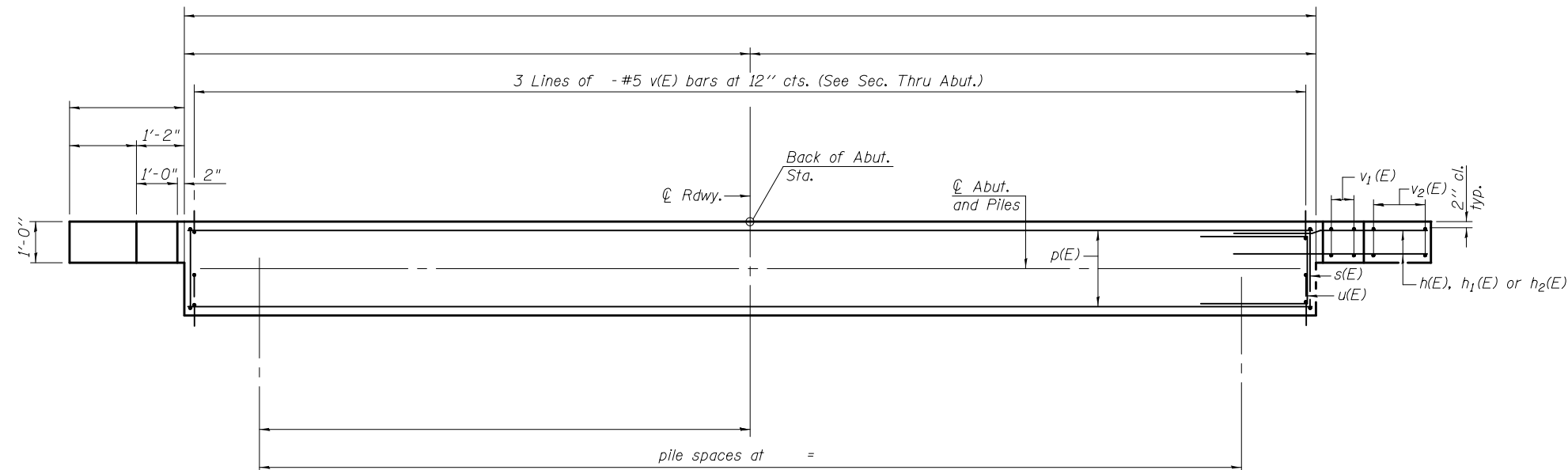
Bar	No.	Size	Length	Shape
$h(E)$		#		
$h_1(E)$		#		
$h_2(E)$	4	#5		
$p(E)$		#		
$s_2(E)$		#5		
$s_3(E)$		#5		
$s_4(E)$		#5		
$sp(E)$		#4	2'-0"	
$u(E)$	8	#6		
$u_1(E)$	6	#5		
$v_1(E)$		#8	5'-11"	
$v_2(E)$		#5		
$v_3(E)$		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

* Length is height of spiral.
For details of piles see sheet of .

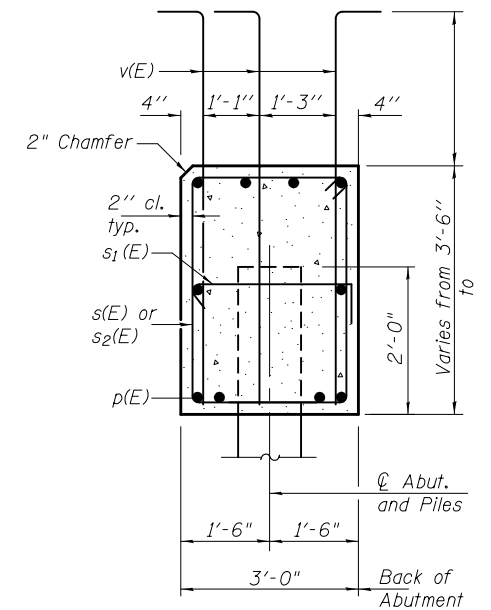
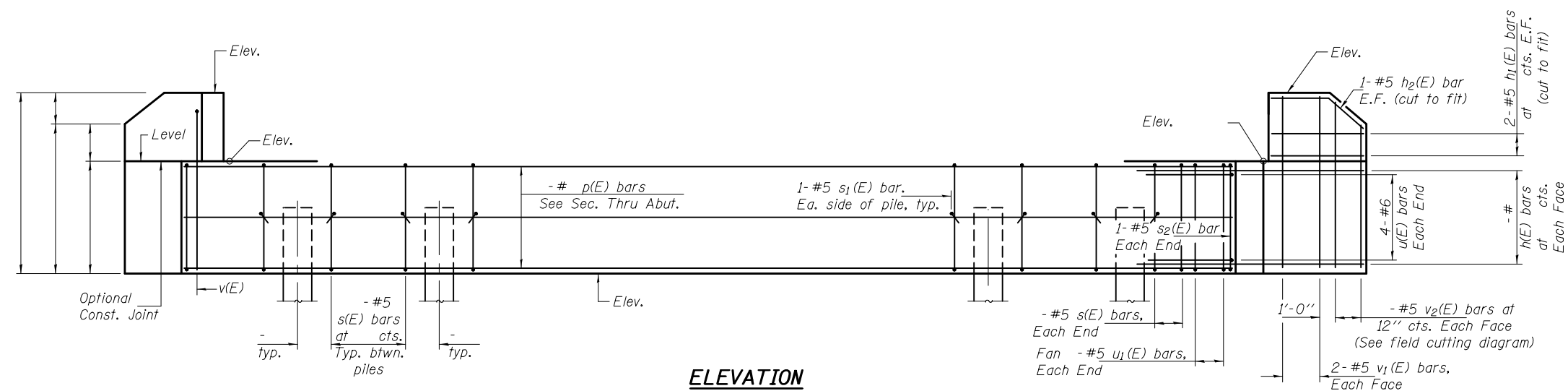
AI-40S-R		8-31-12		use remainder of bars in opposite face.		<u>BAR S2(E) & S4(E)</u>		<u>BAR S3(E)</u>		<u>BAR U1(E)</u>	
FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT					



Bar	No.	Size	Length	Shape
h(E)		#		_____
h ₁ (E)	8	#5		_____
h ₂ (E)	4	#5		_____
p(E)		#		_____
s(E)		#5	12'-7"	□
s ₁ (E)		#5		┌
u(E)	8	#6	10'-3"	└
v(E)		#5		└
v ₁ (E)	8	#5		_____
v ₂ (E)		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	








FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -								
	ILLINOIS FED. AID PROJECT										

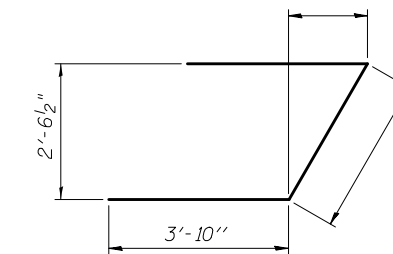
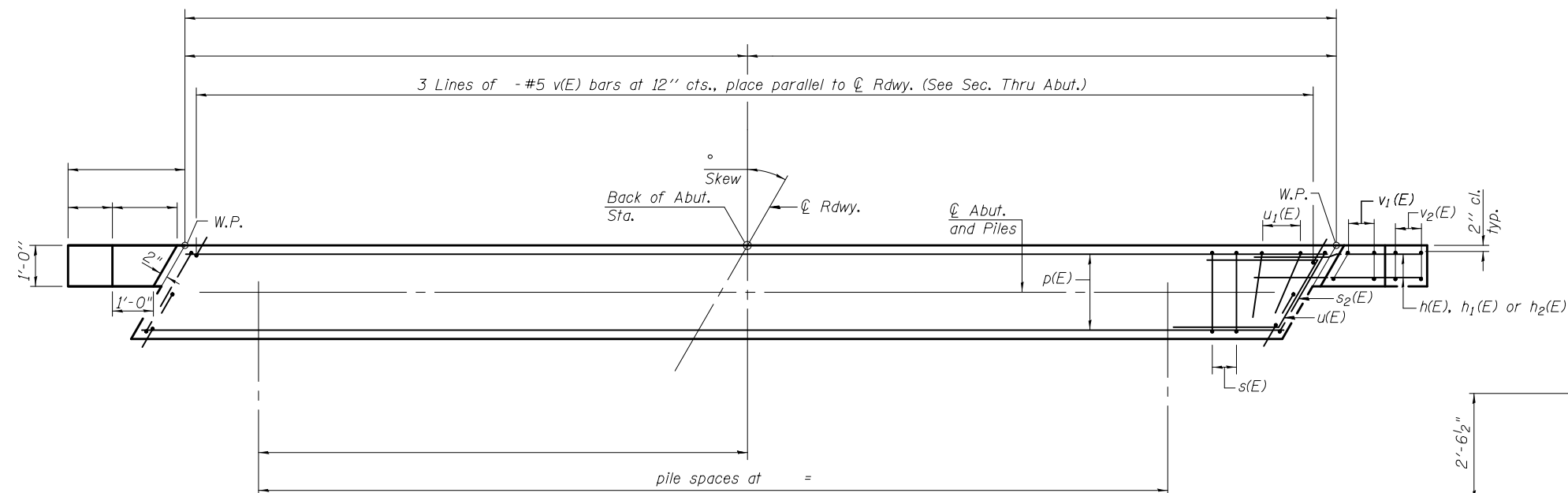


SEC. THRU ABUT.
Dimensions at right angles to abutment.

BILL OF MATERIAL

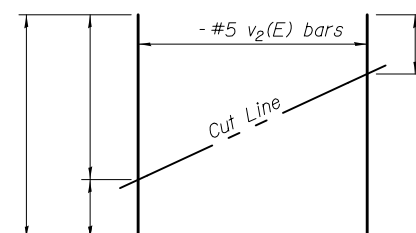
Bar	No.	Size	Length	Shape
$h(E)$		#		_____
$h_1(E)$	8	#5		_____
$h_2(E)$	4	#5		_____
$p(E)$		#		_____
$s(E)$		#5	12'- 7"	
$s_1(E)$		#5		
$s_2(E)$		#5		
$u(E)$	8	#6	10'- 3"	
$u_1(E)$		#5		
$v(E)$		#5		_____
$v_1(E)$	8	#5		_____
$v_2(E)$		#5		_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

For details of piles see sheet of .



PILE DATA

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

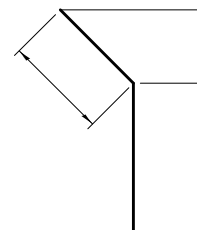


FIELD CUTTING DIAGRAM

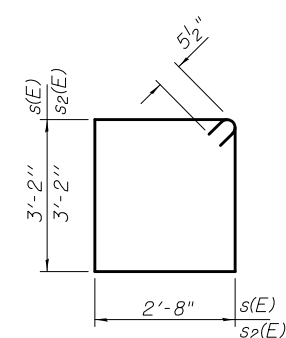
Order $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.



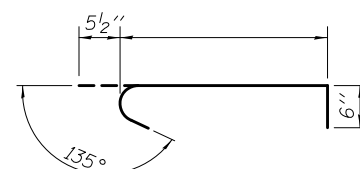
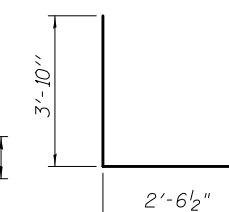
BAR $v(E)$



BAR $h_2(E)$



BAR $s(E)$ & $s_2(E)$


$$\underline{BAR} \ s_1(E)$$

$$\underline{BAR} \ u(E)$$

AIS-R

8-31-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENTS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.				
	PLOT DATE =	CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT				

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS		FED. AID PROJECT		

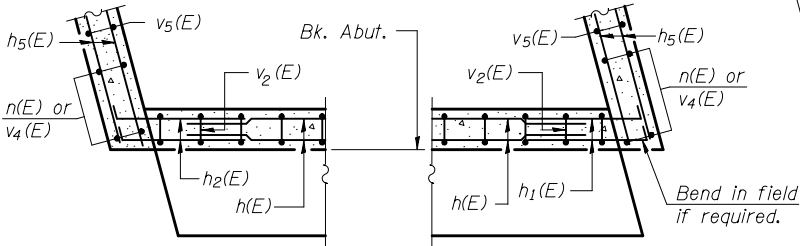
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of - .
For details of reinforcement and Bill of Material,
see sheet - of - .

APPROACH BENT-PILE DATA

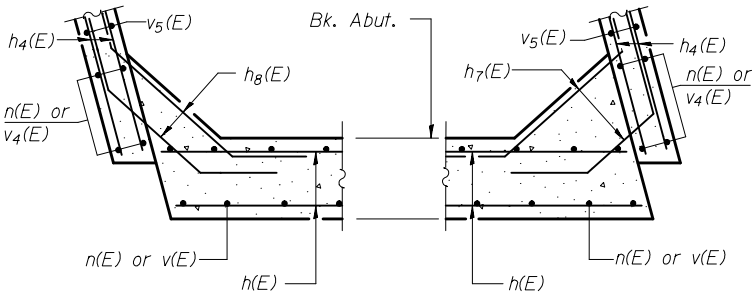
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

ABUTMENT- PILE DATA

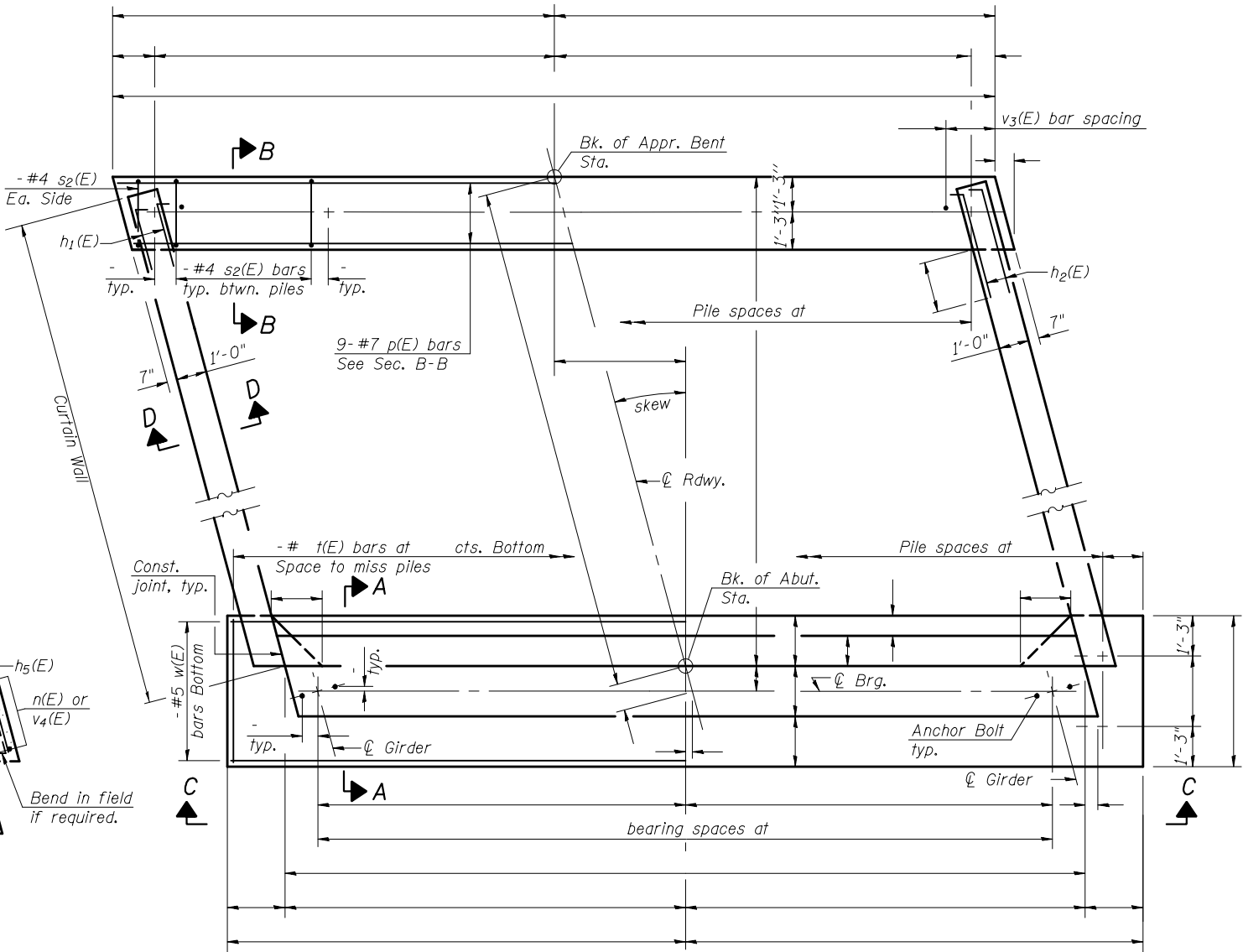
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



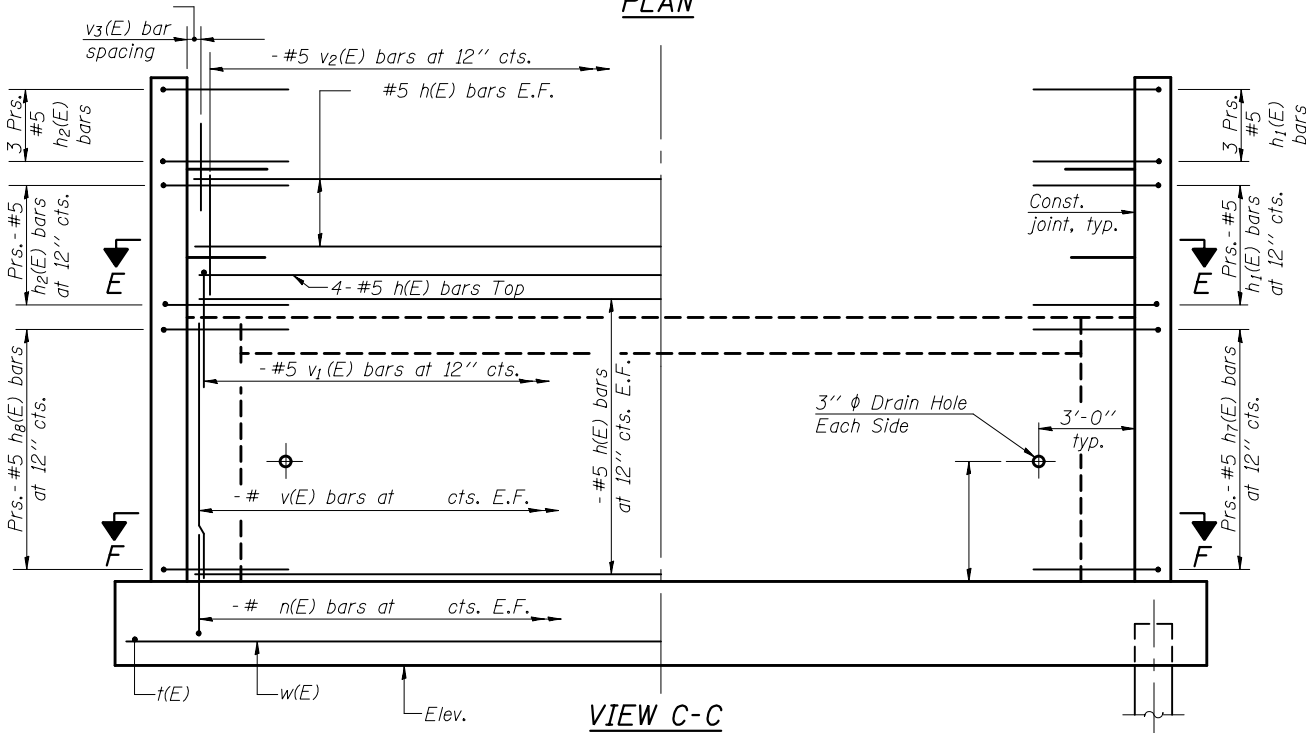
SECTION E-E



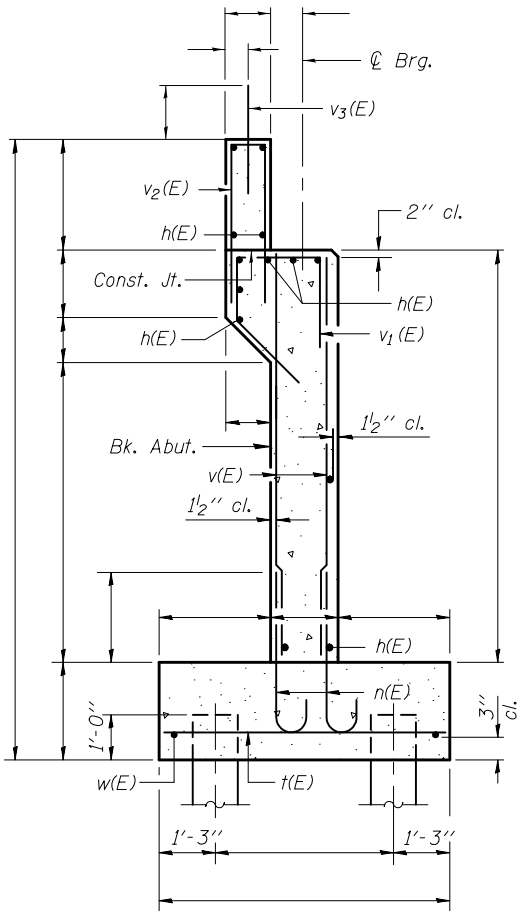
SECTION F-F



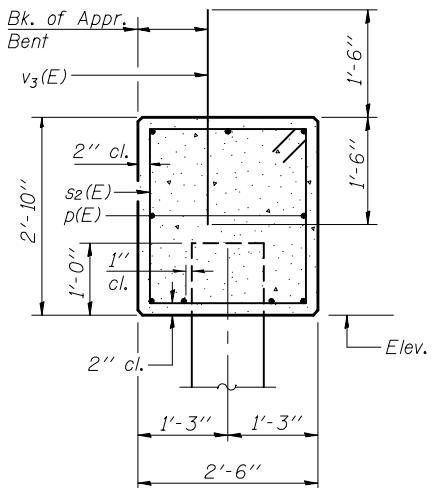
PLAN



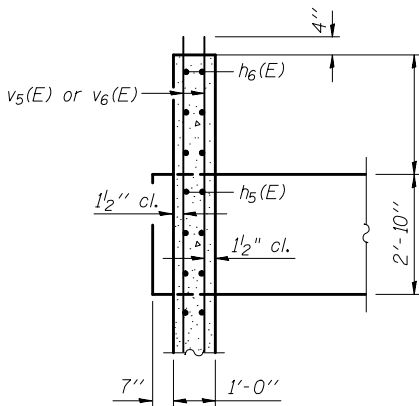
VIEW C-C



SECTION A-A



SECTION B-B



SECTION D-D

AV-I-L

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
	PLOT SCALE =	DRAWN -	REVISD -
	PLOT DATE =	CHECKED -	REVISD -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENTS
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

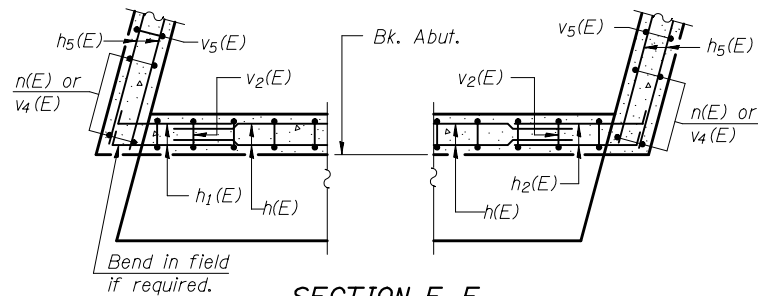
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of - .
For details of reinforcement and Bill of Material,
see sheet - of - .

APPROACH BENT-PILE DATA

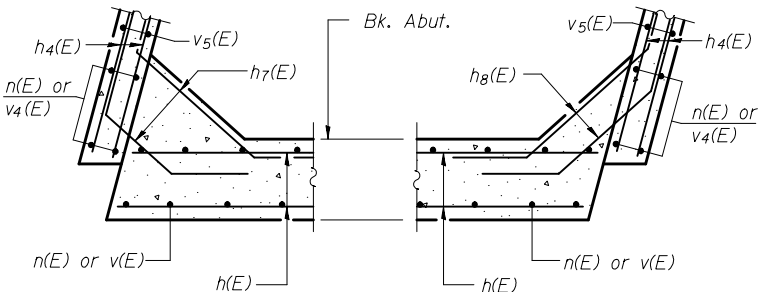
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

ABUTMENT- PILE DATA

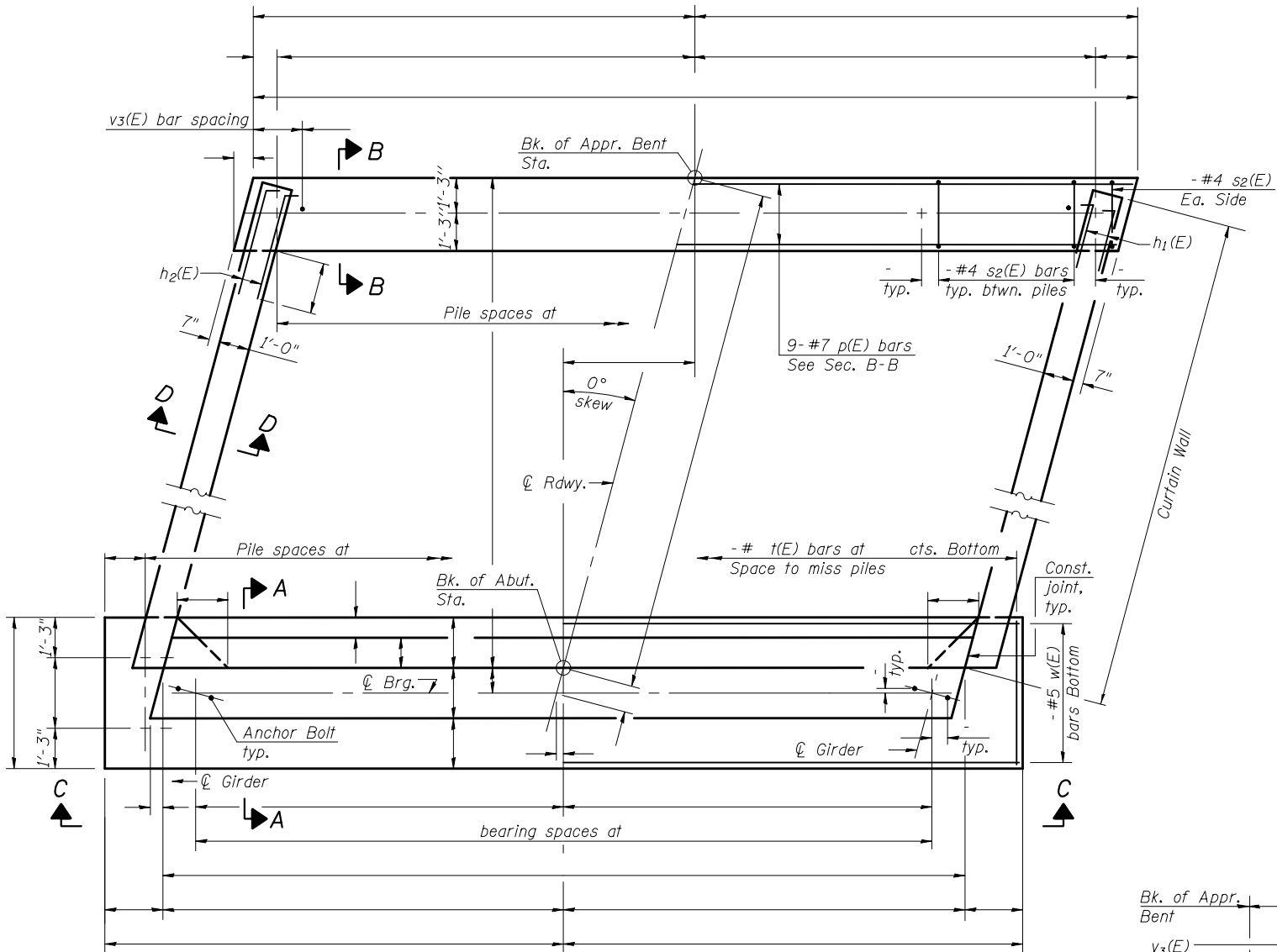
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



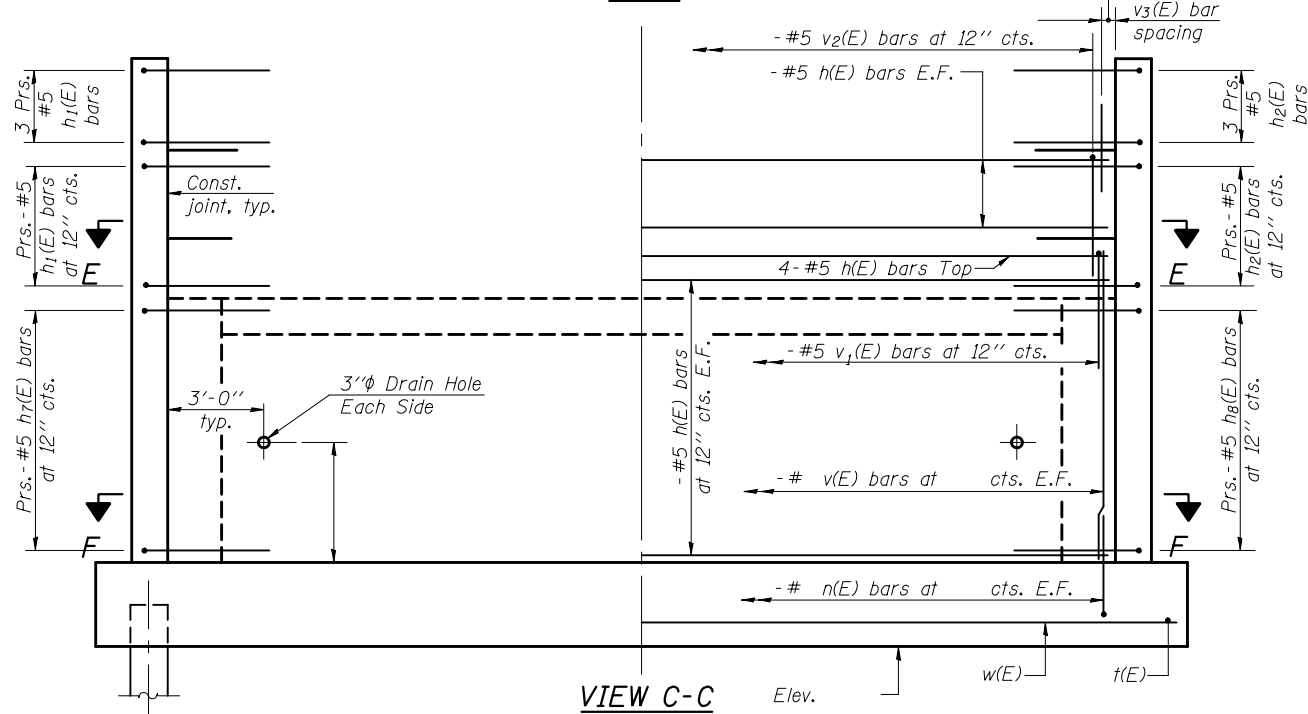
SECTION E-E



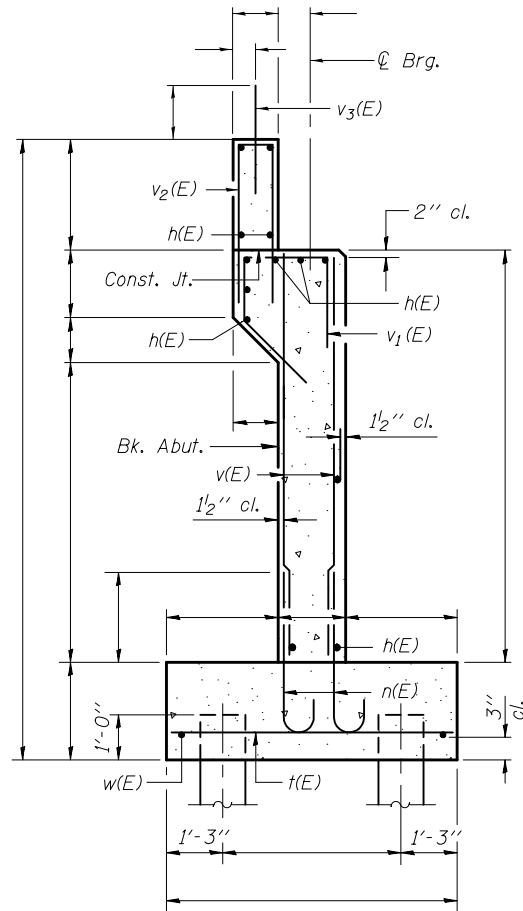
SECTION F-F



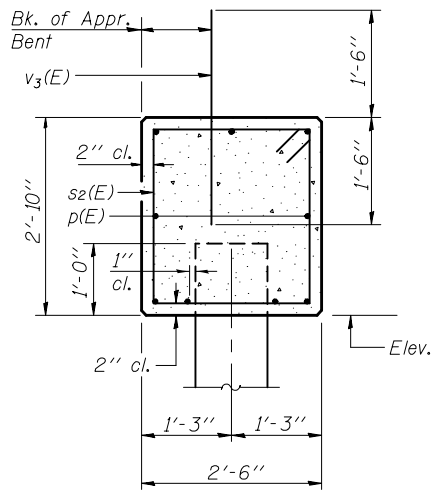
PLAN



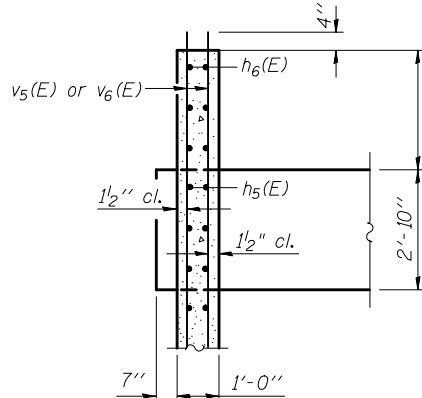
VIEW C-C



SECTION A-A



SECTION B-B



SECTION D-D

AV-I-R

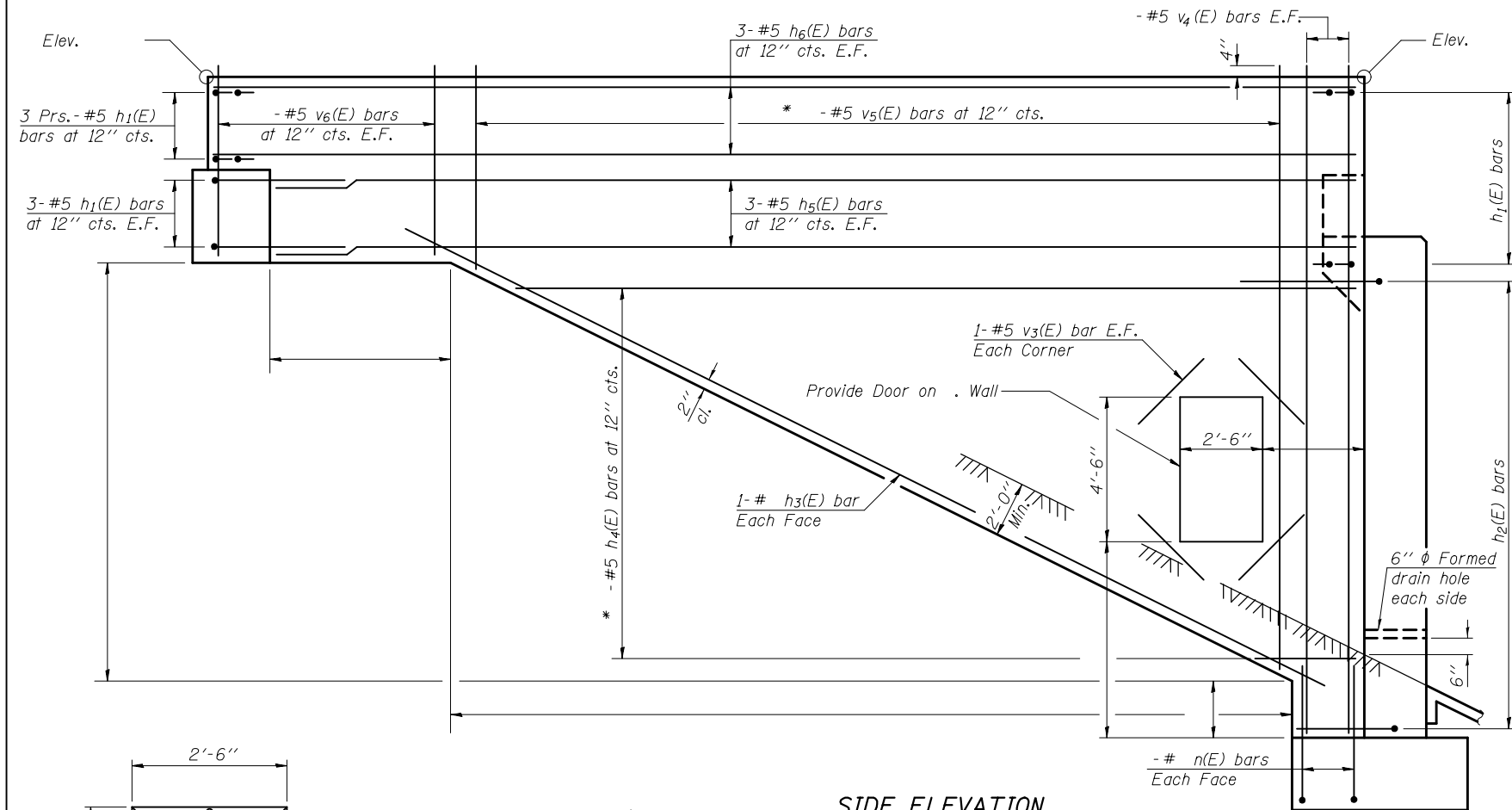
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
	PLOT SCALE =	DRAWN -	REVISD -
	PLOT DATE =	CHECKED -	REVISD -

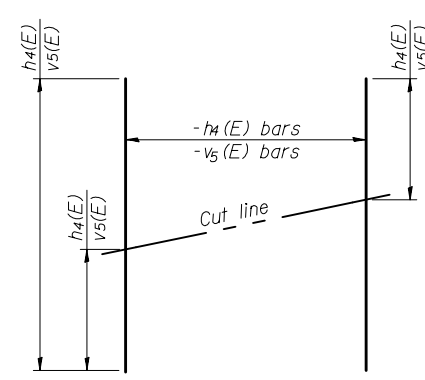
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENTS
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

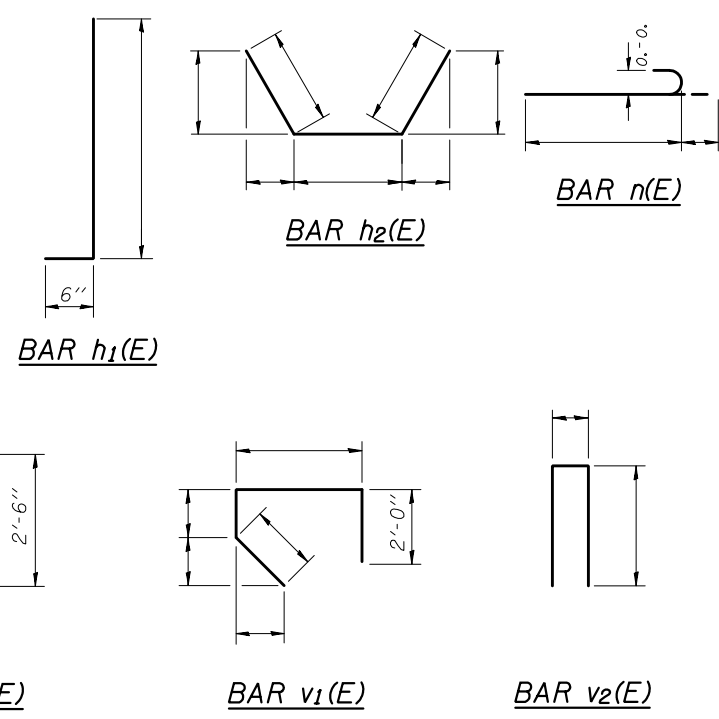


SIDE ELEVATION



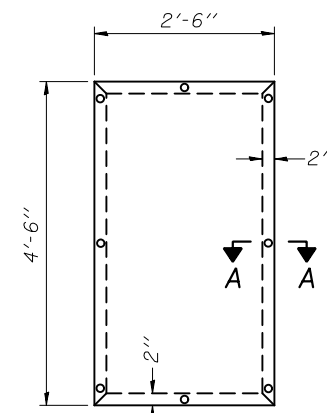
FIELD CUTTING DIAGRAM

* Order $h_4(E)$ and $v_5(E)$ bars full length.
Cut to fit and use the remainder of bars
in opposite face.



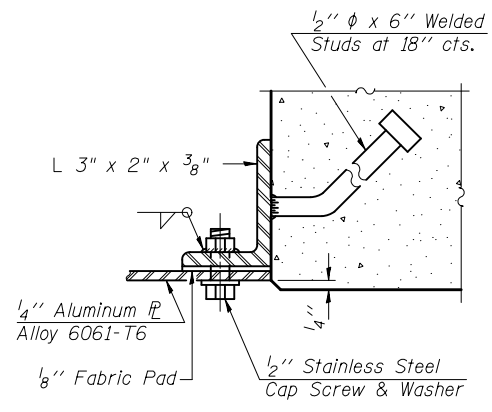
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#5		
$h_1(E)$		#5		
$h_2(E)$		#5		
$h_3(E)$		#5		
$h_4(E)$		#5		
$h_5(E)$		#5		
$h_6(E)$		#5		
$n(E)$				
$p(E)$		#7		
$s_2(E)$		#4	10'-1"	
$t(E)$				
$v(E)$				
$v_1(E)$		#5		
$v_2(E)$		#5		
$v_3(E)$		#5	3'-0"	
$v_4(E)$		#5		
$v_5(E)$		#5		
$v_6(E)$		#5		
$w(E)$		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Concrete Sealer			Sq. Ft.	



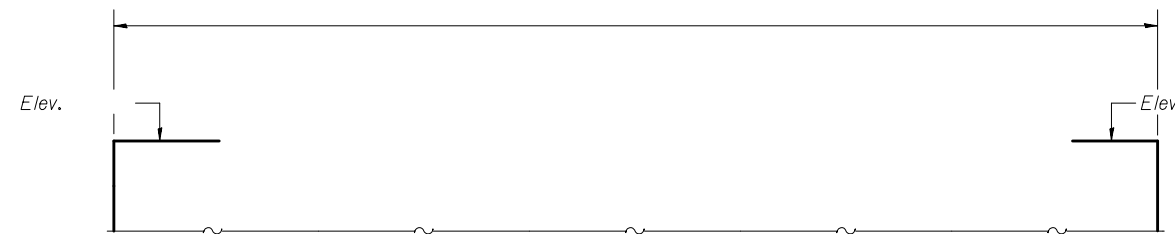
DOOR ELEVATION

Cost of door and frame are included
with Concrete Structures.



SECTION A-A

Notes:
Four steps monolithically with cap.



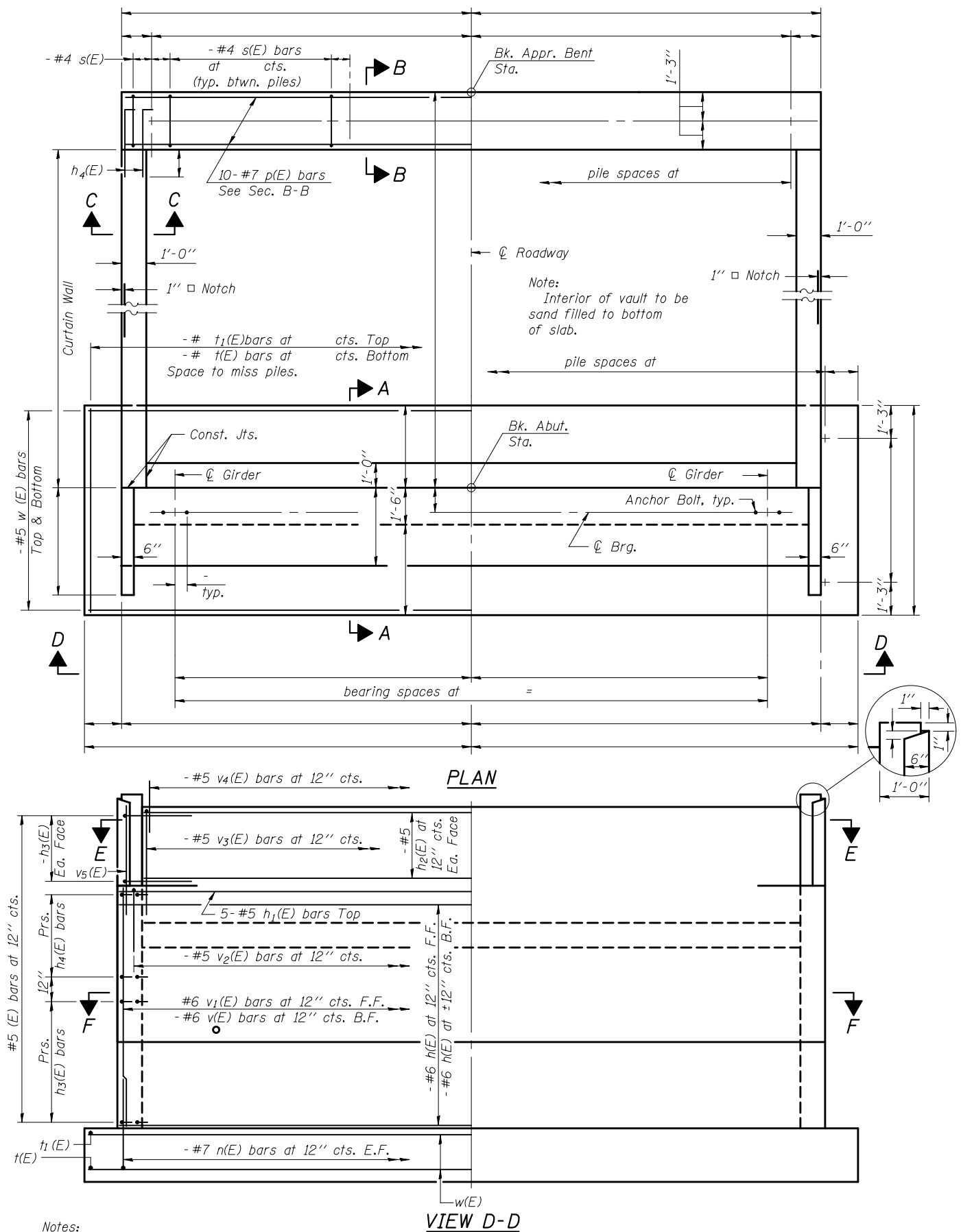
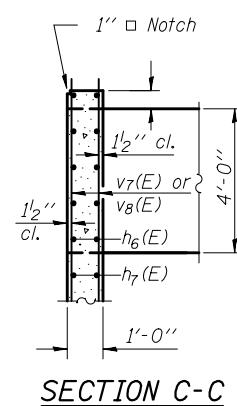
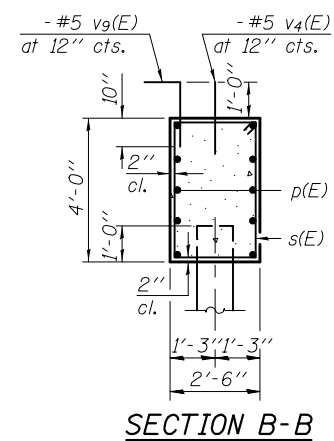
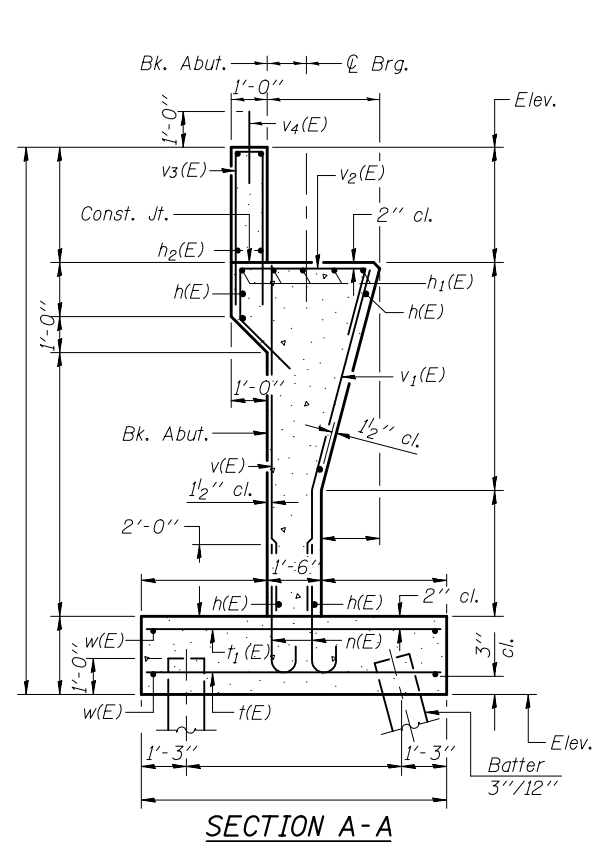
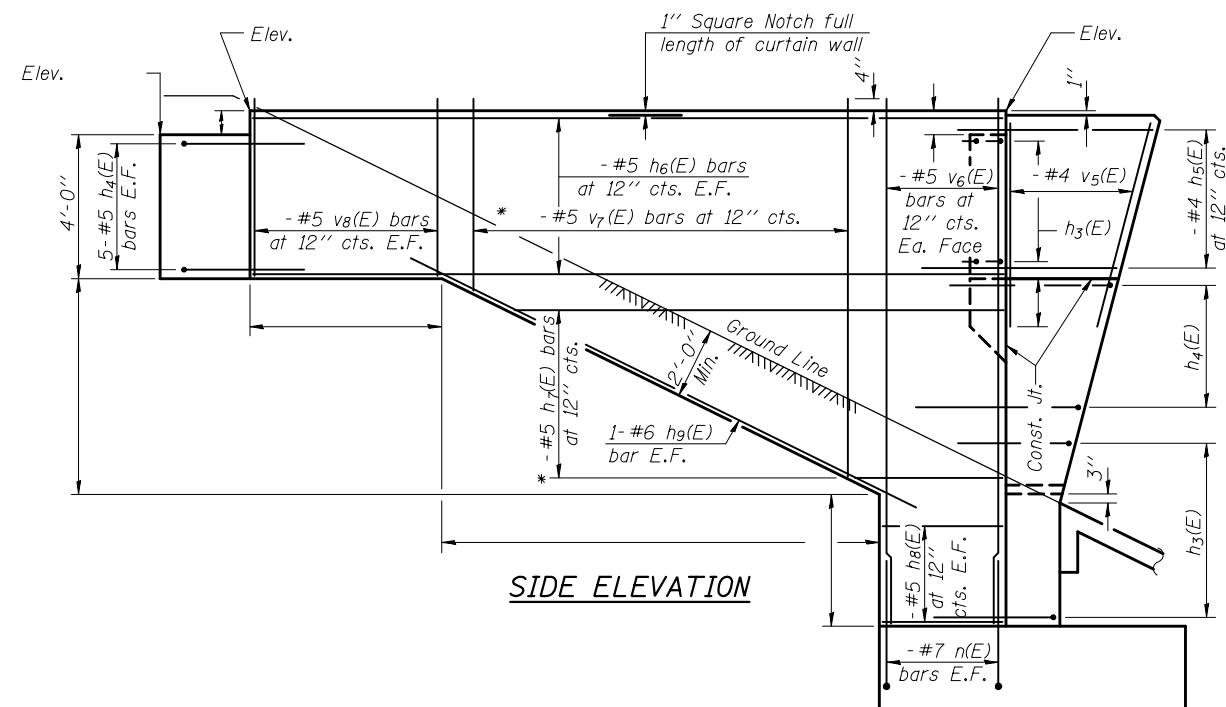
APPROACH BENT STEP DETAIL

(Looking)

AV-IW-0

7-1-10

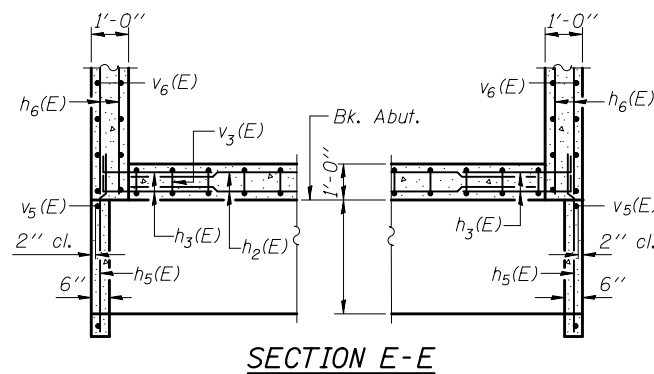
FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.			
		CHECKED -	REVISED -										
	PLOT SCALE =	DRAWN -	REVISED -										
	PLOT DATE =	CHECKED -	REVISED -										
							CONTRACT NO.						
							ILLINOIS FED. AID PROJECT						



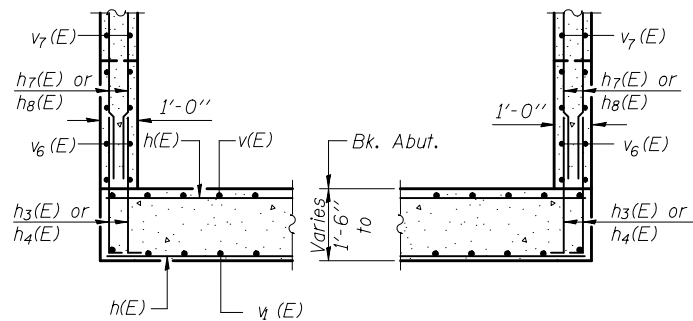
Notes:
Space reinforcement in cap to miss anchor bolts.
For details of piles, see sheet - of - .

(Sheet 1 of 2)

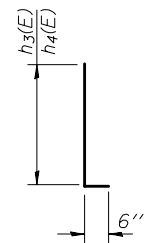
AV-S-0		7-1-10				(Sheet 1 of 2)				
FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -							
	PLOT DATE =	CHECKED -	REVISED -							
						CONTRACT NO.				
						ILLINOIS FED. AID PROJECT				



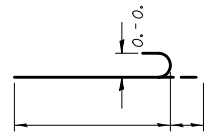
SECTION E-E



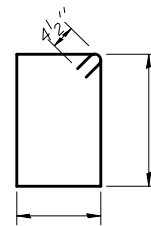
SECTION F-F



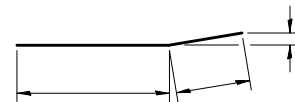
BARS $h_3(E)$
and $h_4(E)$



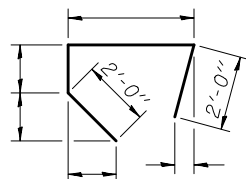
BAR $n(E)$



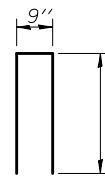
BAR $s(E)$



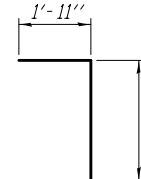
BAR $v_1(E)$



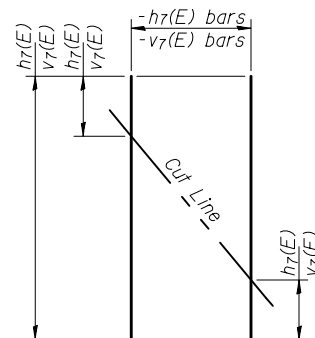
BAR $v_2(E)$



BAR $v_3(E)$



BAR $v_9(E)$



FIELD CUTTING DIAGRAM

* Order $h_7(E)$ & $v_7(E)$ bars full length.
Cut to fit as shown and use remainder
of bars in other face.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#6		—
$h_1(E)$		#5		—
$h_2(E)$		#5		—
$h_3(E)$		#5		L
$h_4(E)$		#5		L
$h_5(E)$		#4		—
$h_6(E)$		#5		—
$h_7(E)$		#5		—
$h_8(E)$		#5		—
$h_9(E)$		#6		—
$n(E)$		#7		U
$p(E)$		#7		—
$s(E)$		#4		□
$t(E)$				—
$t_1(E)$				—
$v(E)$		#6		—
$v_1(E)$		#6		—
$v_2(E)$		#5		—
$v_3(E)$		#5		—
$v_4(E)$		#5		—
$v_5(E)$		#4		—
$v_6(E)$		#5		—
$v_7(E)$		#5		—
$v_8(E)$		#5		—
$v_9(E)$		#5		—
$w(E)$		#5		—
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Sand Backfill			Cu. Yd.	
Concrete Sealer			Sq. Ft.	

APPR. BENT-PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

ABUT.- PILE DATA

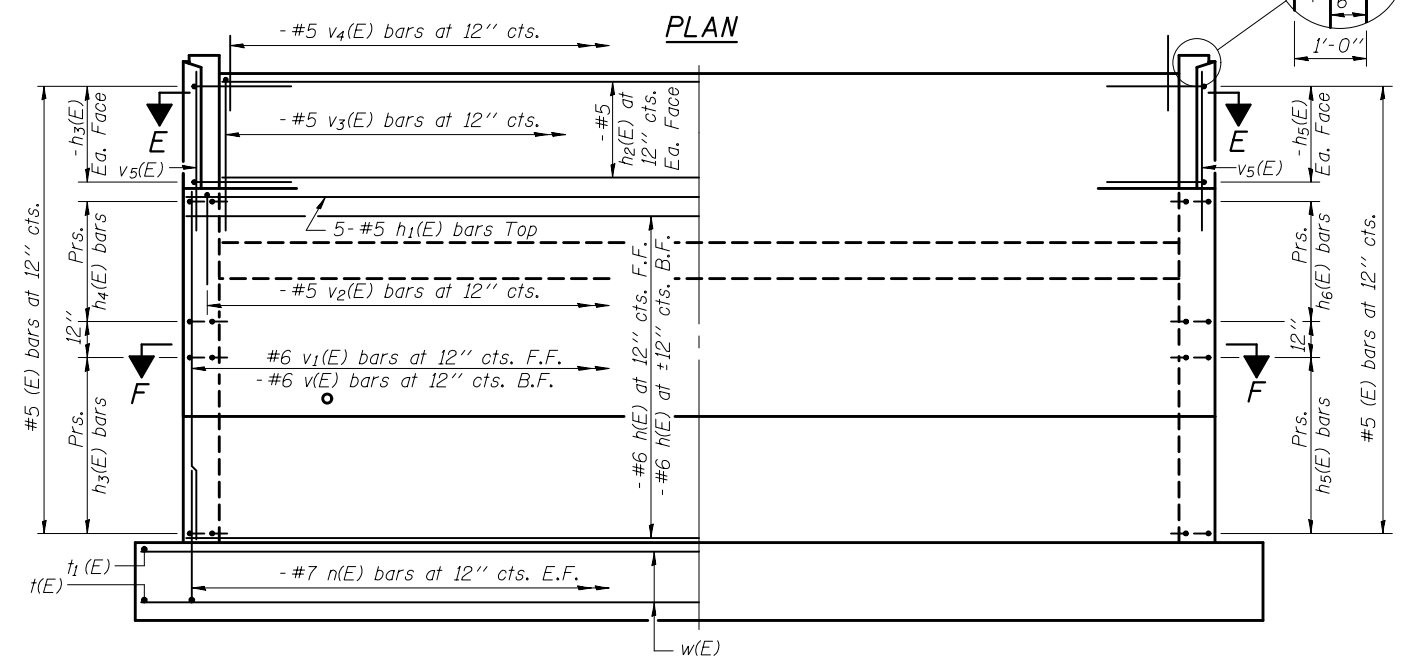
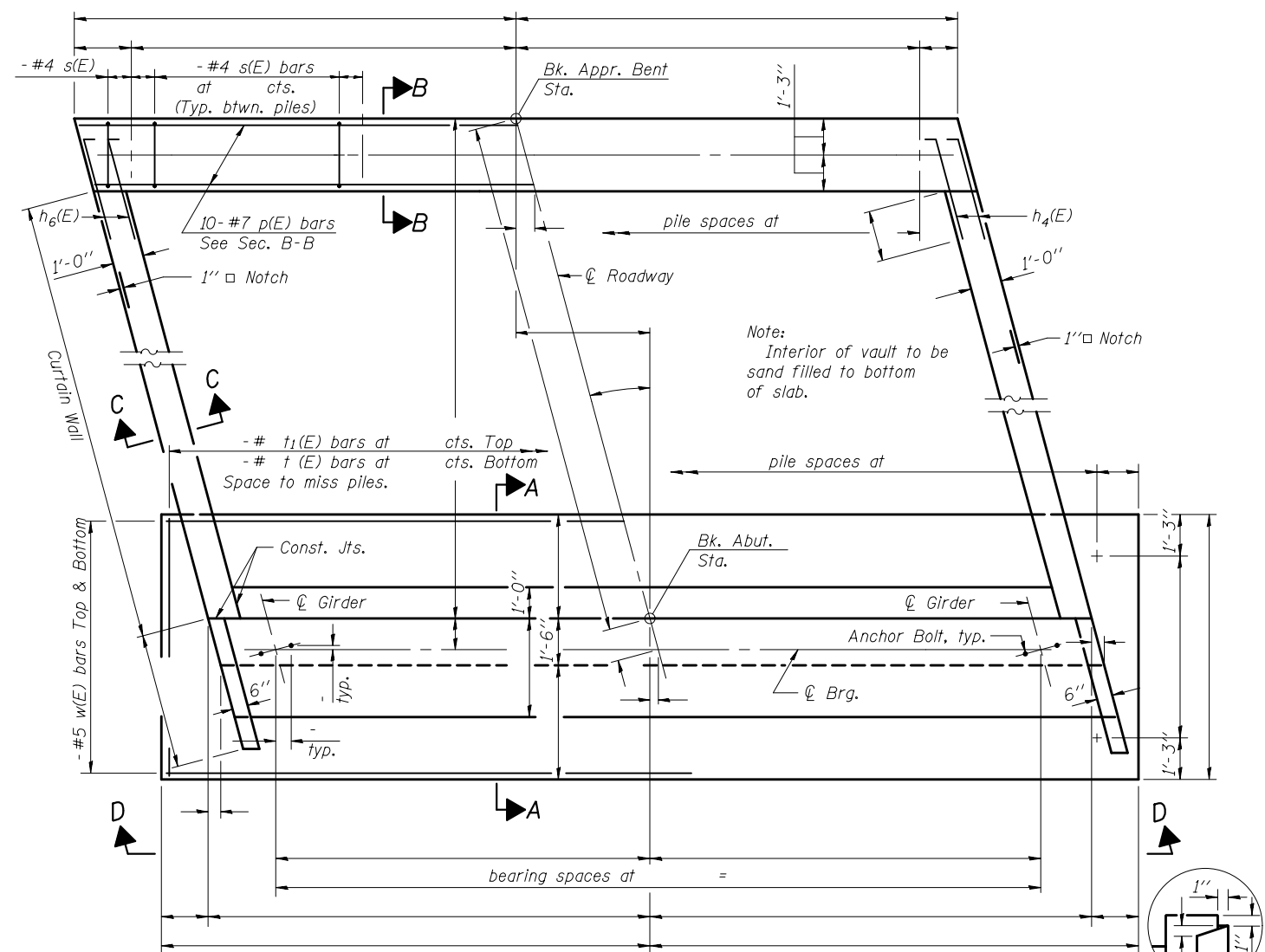
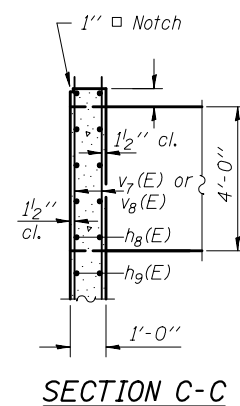
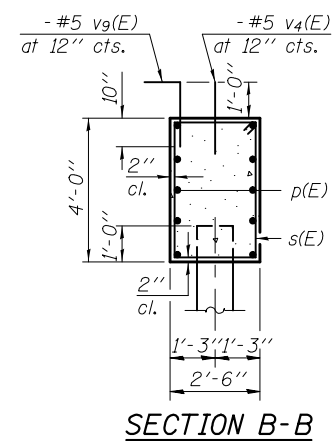
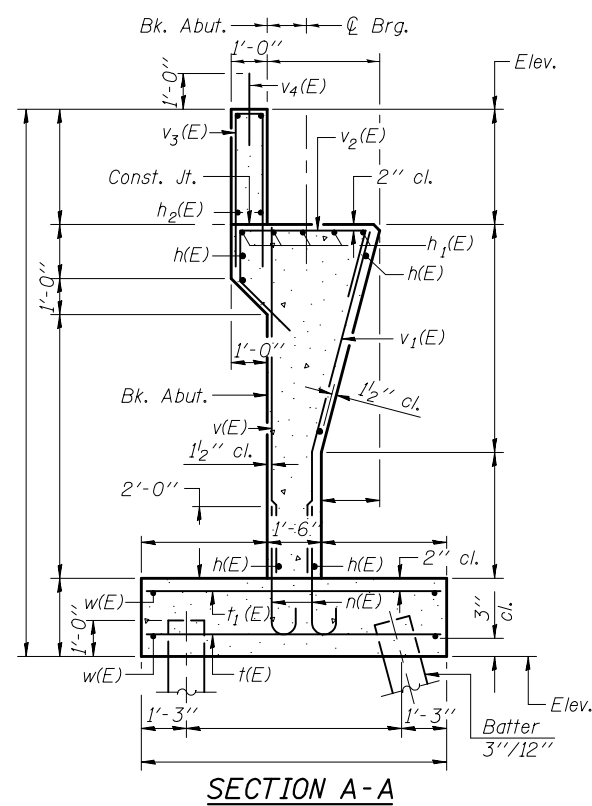
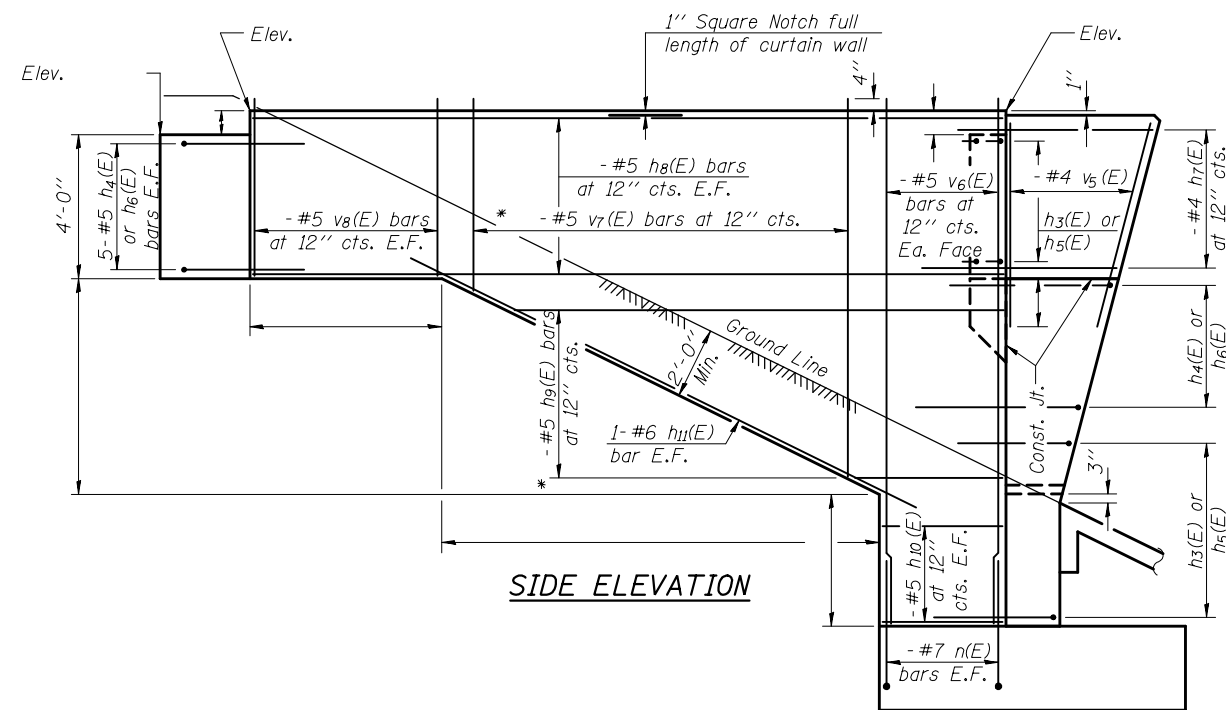
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

AV-S-0

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -					CONTRACT NO.		
	PLOT DATE =	CHECKED -	REVISED -					ILLINOIS FED. AID PROJECT		

(Sheet 2 of 2)



Notes:
Space reinforcement in cap to miss anchor bolts.
For details of piles, see sheet - of -.

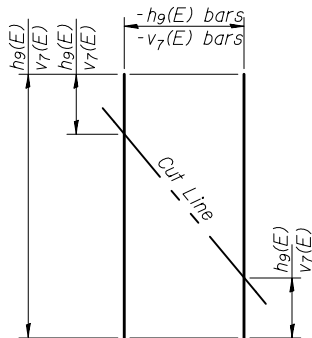
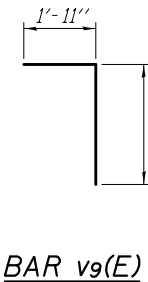
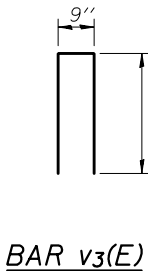
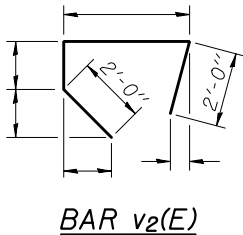
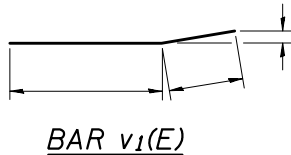
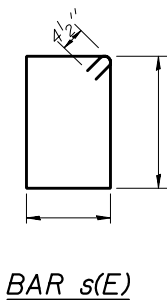
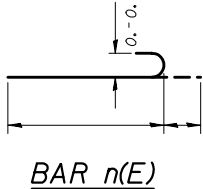
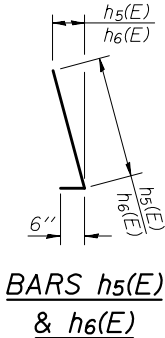
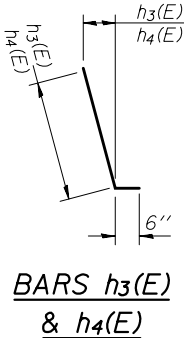
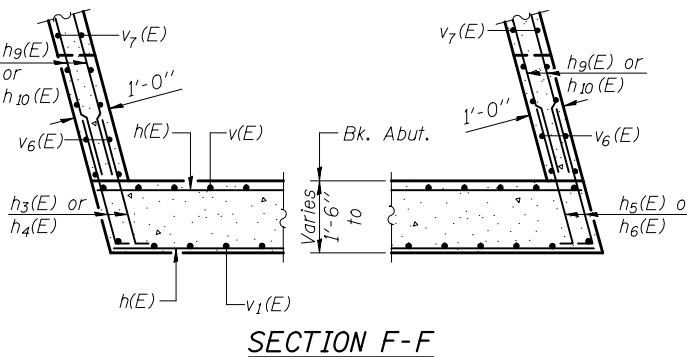
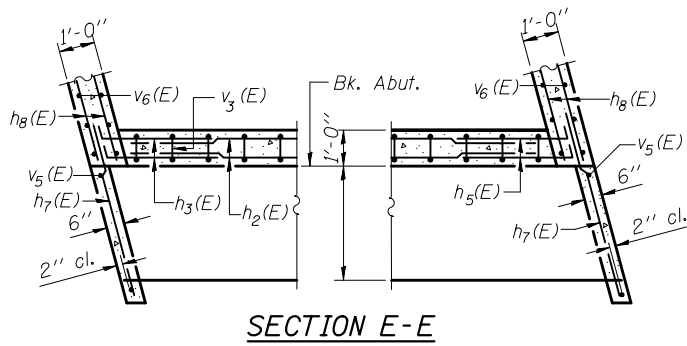
VIEW D-D

(Sheet 1 of 2)

AV-S-L

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -								
							ILLINOIS FED. AID PROJECT				



FIELD CUTTING DIAGRAM
 * Order h₉(E) & v₇(E) bars full length.
 Cut to fit as shown and use remainder
 of bars in other face.

APPR. BENT-PILE DATA

Type:
 Nominal Required Bearing:
 Factored Resistance Available:
 Est. Length:
 No. Production Piles:
 No. Test Piles:

ABUT.- PILE DATA

Type:
 Nominal Required Bearing:
 Factored Resistance Available:
 Est. Length:
 No. Production Piles:
 No. Test Piles:

BILL OF MATERIAL

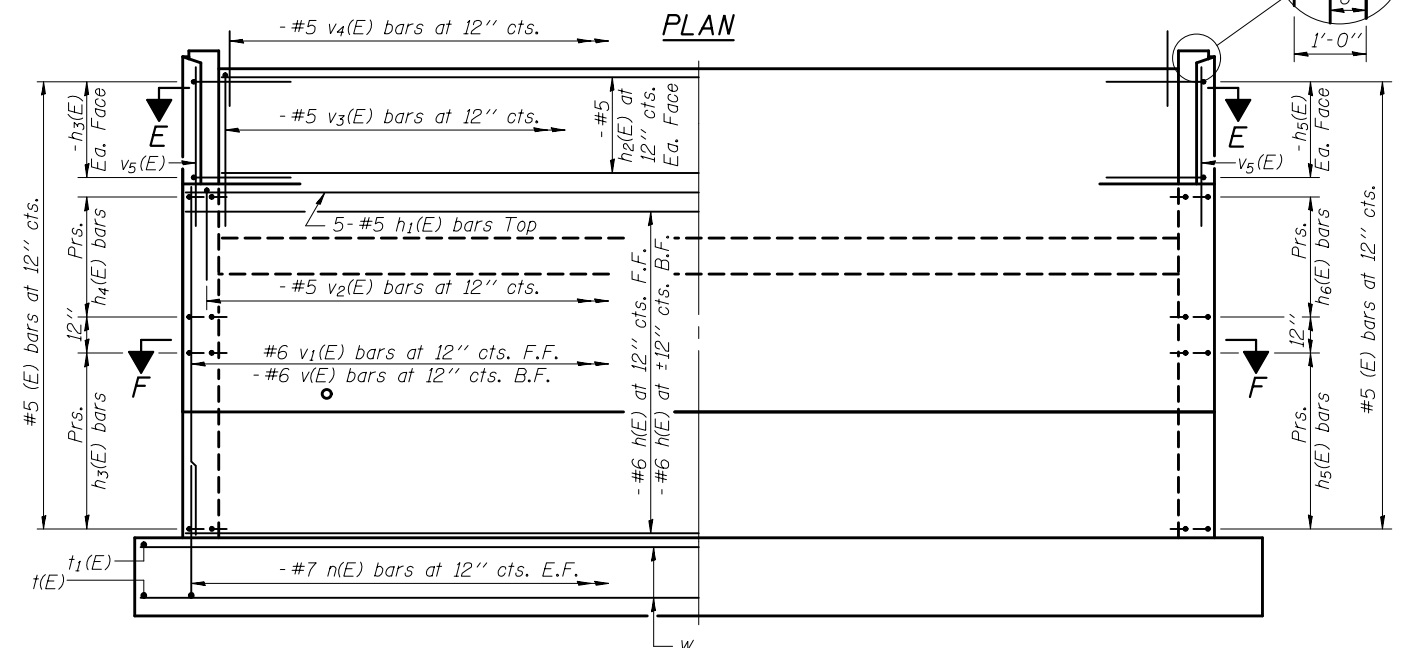
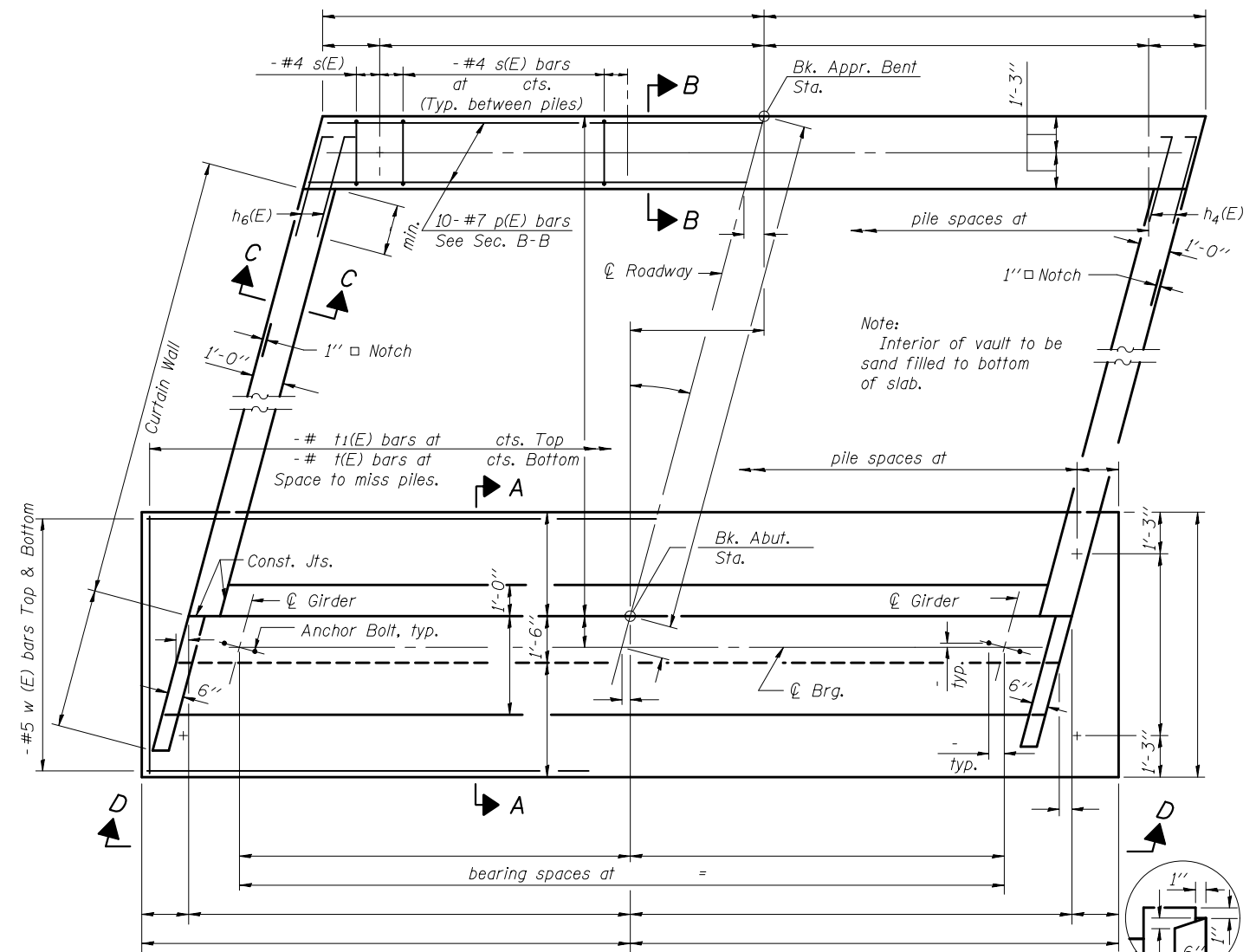
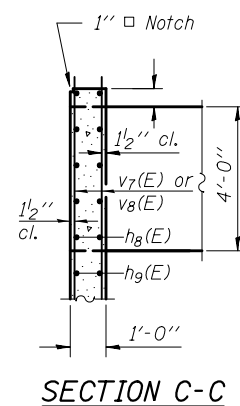
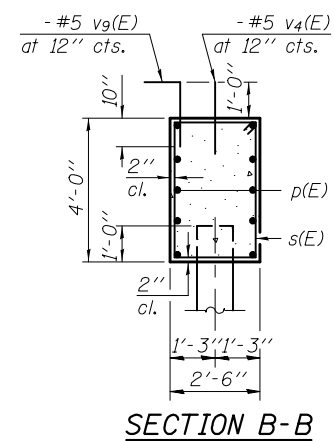
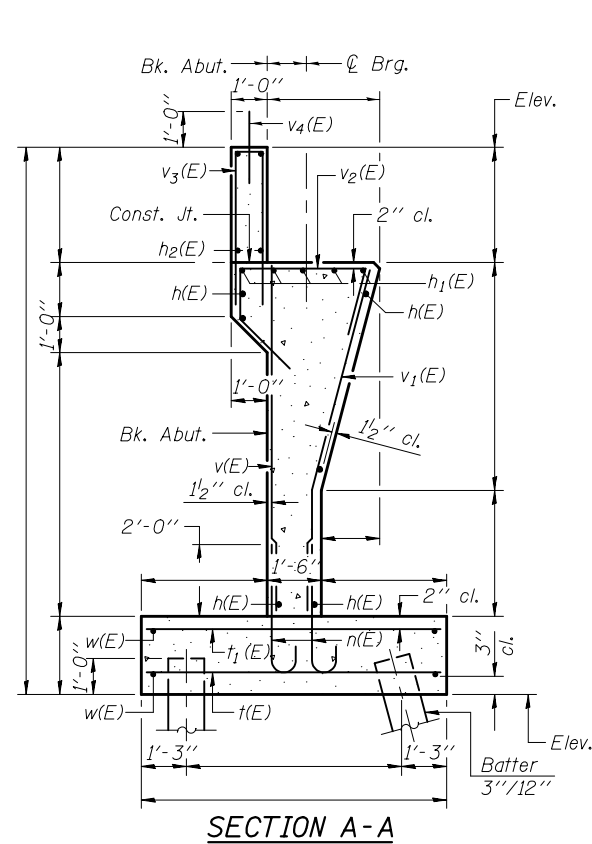
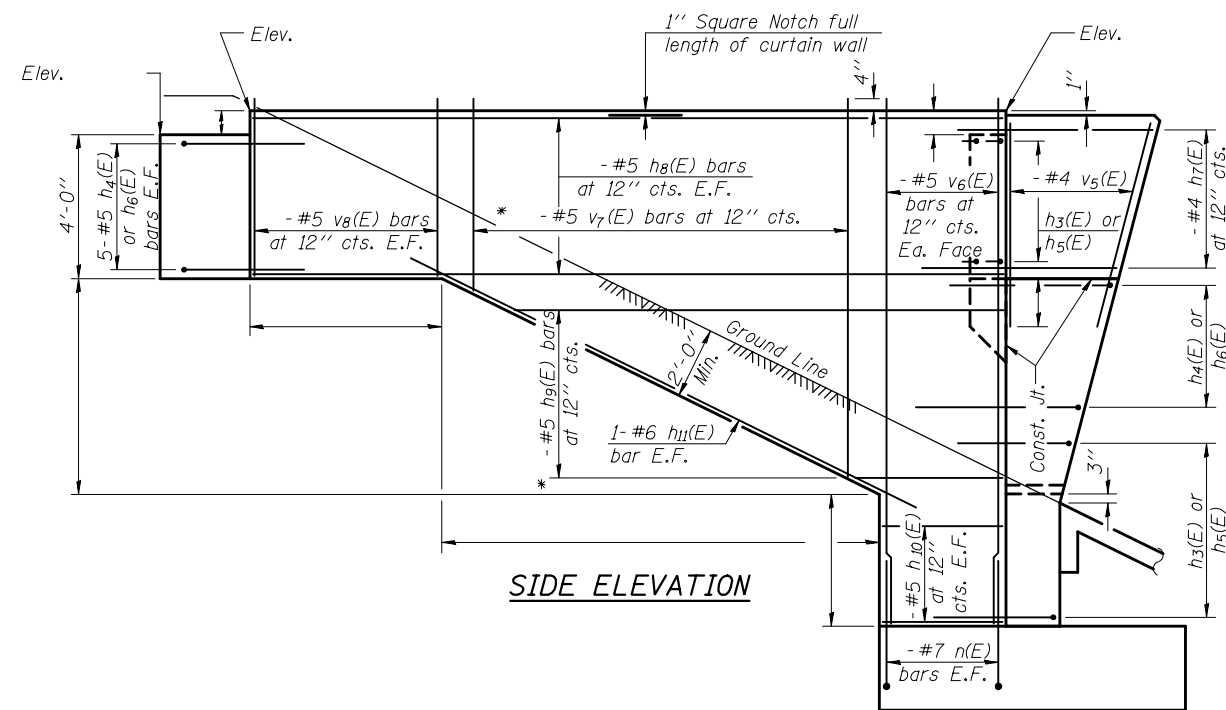
Bar	No.	Size	Length	Shape
h(E)		#6		—
h ₁ (E)		#5		—
h ₂ (E)		#5		—
h ₃ (E)		#5		—
h ₄ (E)		#5		—
h ₅ (E)		#5		—
h ₆ (E)		#5		—
h ₇ (E)		#4		—
h ₈ (E)		#5		—
h ₉ (E)		#5		—
h ₁₀ (E)		#5		—
h ₁₁ (E)		#6		—
n(E)		#7		—
p(E)		#7		—
s(E)		#4		—
t(E)				—
t ₁ (E)				—
v(E)		#6		—
v ₁ (E)		#6		—
v ₂ (E)		#5		—
v ₃ (E)		#5		—
v ₄ (E)		#5		—
v ₅ (E)		#4		—
v ₆ (E)		#5		—
v ₇ (E)		#5		—
v ₈ (E)		#5		—
v ₉ (E)		#5		—
w(E)		#5		—
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Sand Backfill			Cu. Yd.	
Concrete Sealer			Sq. Ft.	

AV-S-L

7-1-10

(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT SCALE =	DRAWN -	REVISED -					CONTRACT NO.		
	PLOT DATE =	CHECKED -	REVISED -					ILLINOIS FED. AID PROJECT		



Notes:
Space reinforcement in cap to miss anchor bolts.
For details of piles, see sheet - of -.

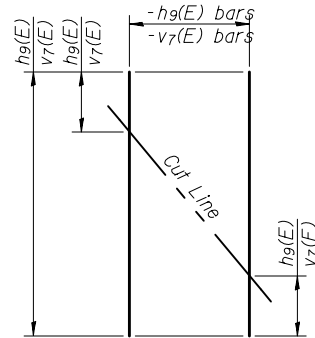
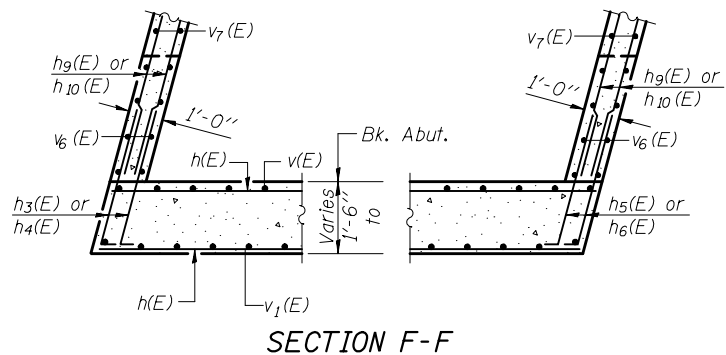
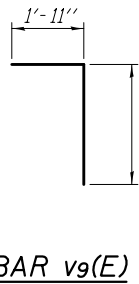
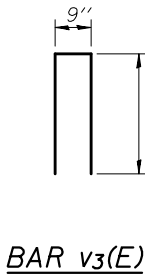
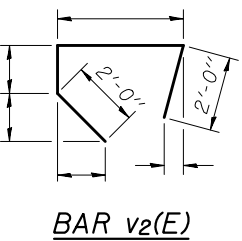
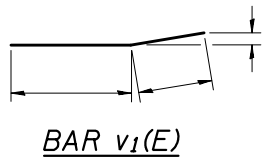
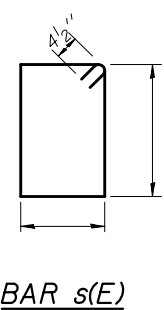
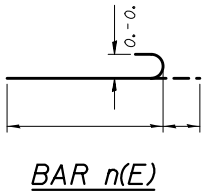
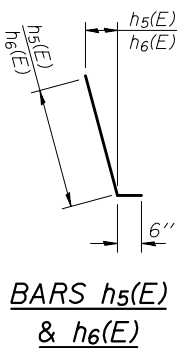
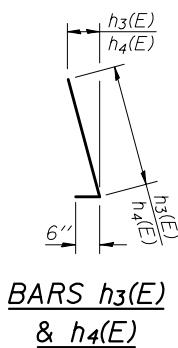
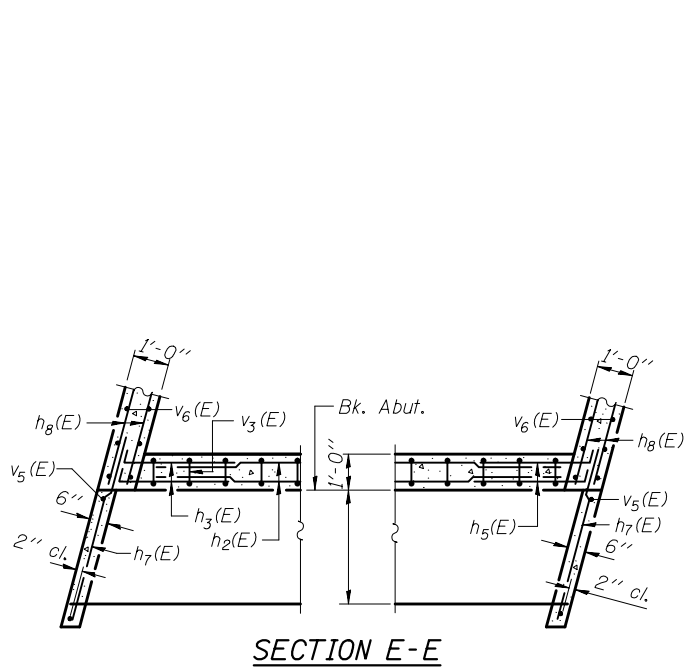
VIEW D-D

(Sheet 1 of 2)

AV-S-R

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -								
							ILLINOIS FED. AID PROJECT				



FIELD CUTTING DIAGRAM
 * Order h9(E) & v7(E) bars full length.
 Cut to fit as shown and use remainder
 of bars in other face.

APPR. BENT-PILE DATA

Type:
 Nominal Required Bearing:
 Factored Resistance Available:
 Est. Length:
 No. Production Piles:
 No. Test Piles:

ABUT.- PILE DATA

Type:
 Nominal Required Bearing:
 Factored Resistance Available:
 Est. Length:
 No. Production Piles:
 No. Test Piles:

BILL OF MATERIAL

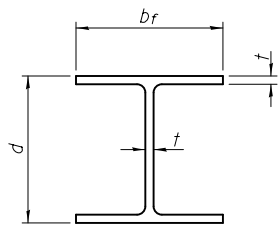
Bar	No.	Size	Length	Shape
h(E)		#6		
h1(E)		#5		
h2(E)		#5		
h3(E)		#5		L
h4(E)		#5		L
h5(E)		#5		J
h6(E)		#5		J
h7(E)		#4		
h8(E)		#5		
h9(E)		#5		
h10(E)		#5		
h11(E)		#6		
n(E)		#7		
p(E)		#7		
s(E)		#4		
t(E)				
t1(E)				
v(E)		#6		
v1(E)		#6		
v2(E)		#5		
v3(E)		#5		
v4(E)		#5		
v5(E)		#4		
v6(E)		#5		
v7(E)		#5		
v8(E)		#5		
v9(E)		#5		
w(E)		#5		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	
Sand Backfill			Cu. Yd.	
Concrete Sealer			Sq. Ft.	

AV-S-R

7-1-10

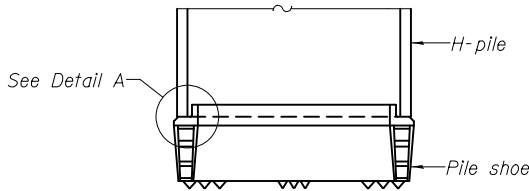
(Sheet 2 of 2)

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT SCALE =	DRAWN -	REVISED -					CONTRACT NO.		
	PLOT DATE =	CHECKED -	REVISED -					ILLINOIS FED. AID PROJECT		

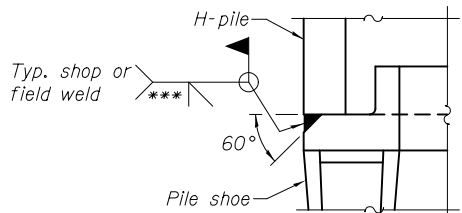


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

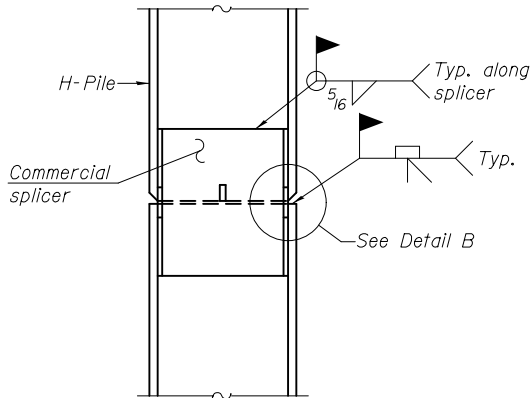


ELEVATION

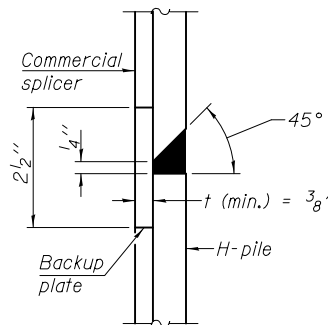


DETAIL A

H-PILE SHOE ATTACHMENT

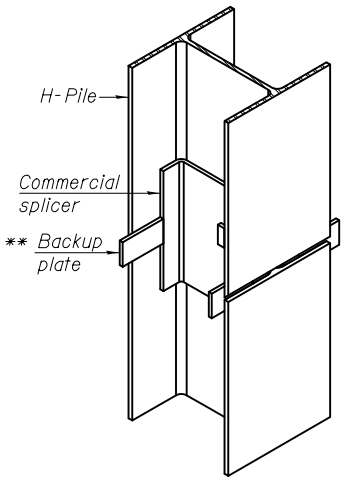


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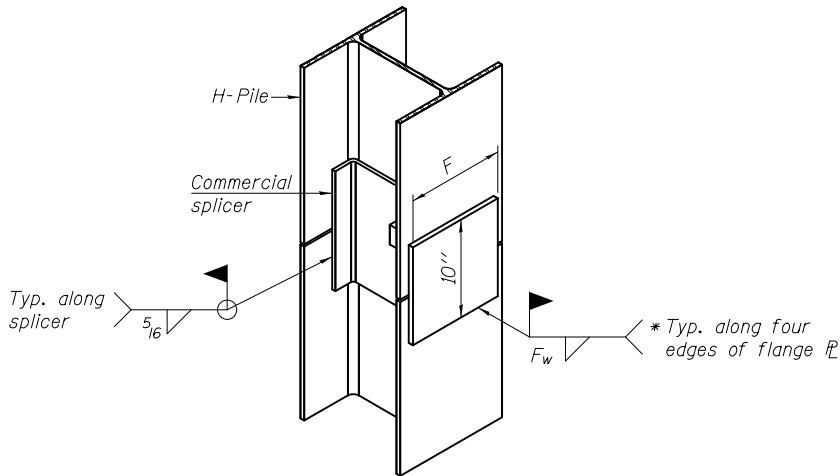


DETAIL "B"

WELDED COMMERCIAL SPLICE



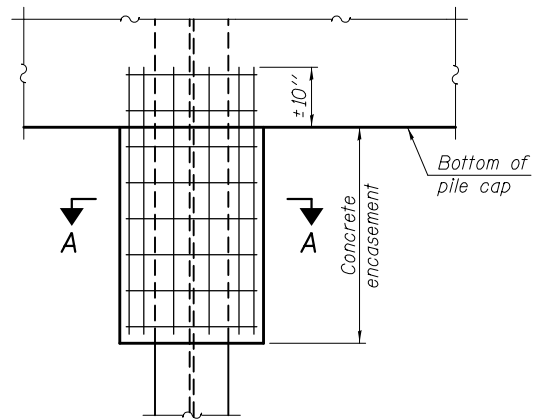
ISOMETRIC VIEW



ISOMETRIC VIEW

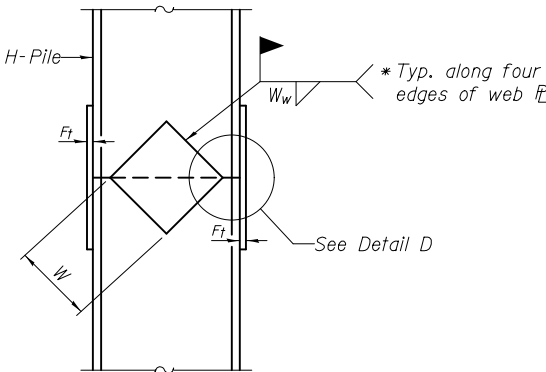
WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
** Remove portions of backup plates that extend outside the flanges.
*** Weld size per pile shoe manufacturer (5/16" min.).

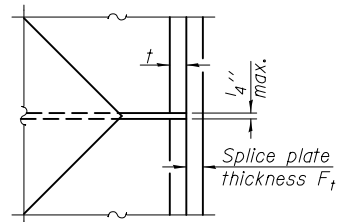


ELEVATION

PILE ENCASEMENT

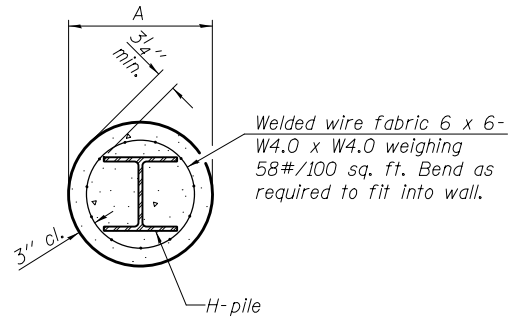


ELEVATION



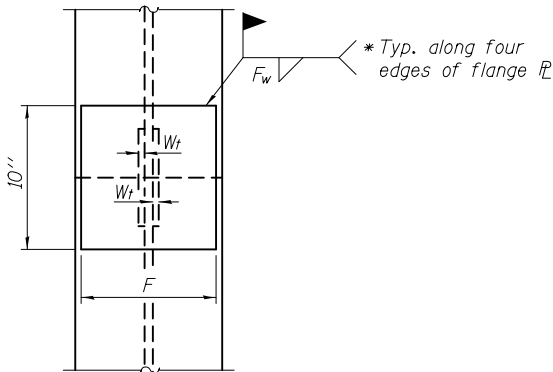
DETAIL D

WELDED PLATE FIELD SPLICE



Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A



END VIEW

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

F-HP

1-27-12

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HP PILE DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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See Detail A, typ.

5/16"

Cut square for tight fit (within 0.01") before welding

Fill bar 1/8" x 1/2" min.

1/4" min.

5/16" min.

3/16" approx.

Metal shell pile

Metal shell piles

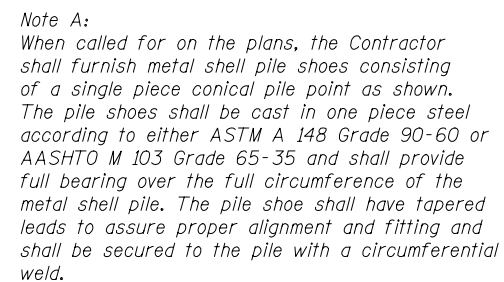
See Detail A

Notes:

The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.

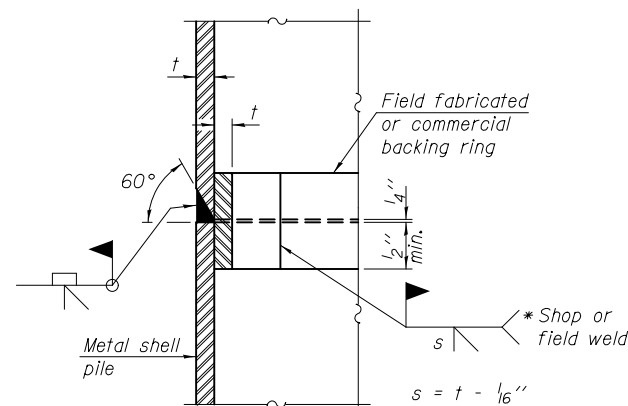
Pile segments shall be driven to solid contact with splicer before welding.

DETAIL A



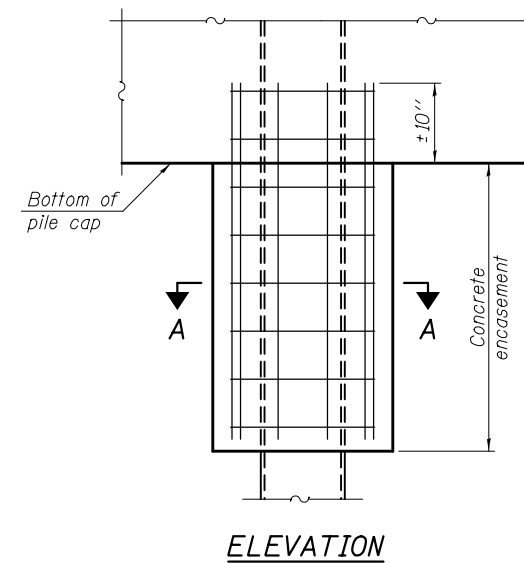
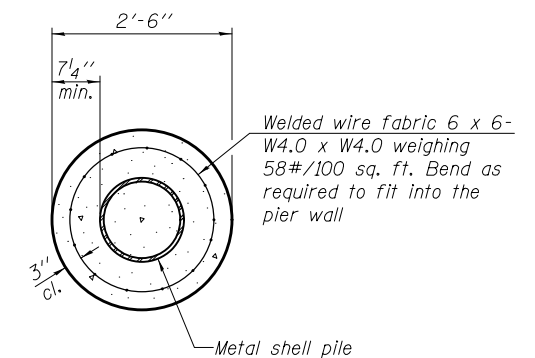
METAL SHELL PILE SHOE ATTACHMENT

(See Note A)



COMPLETE PENETRATION WELD SPLICE

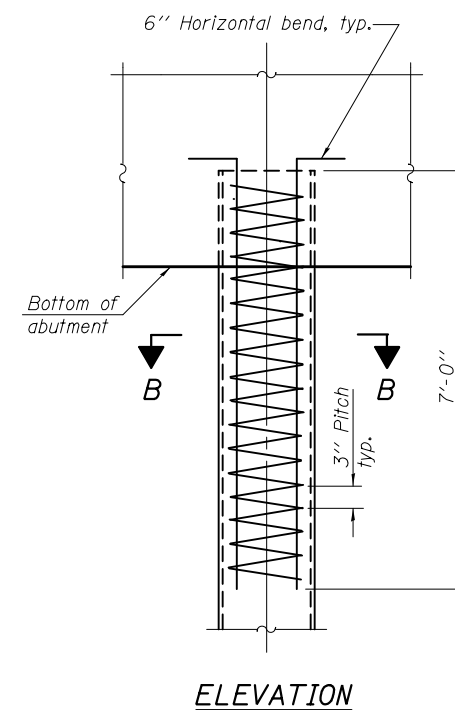
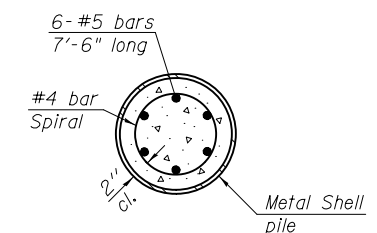
* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.

ELEVATION

SECTION A-A

Note:
Forms for encasement may be omitted when
soil conditions permit.

CONCRETE ENCASEMENT AT PIERS

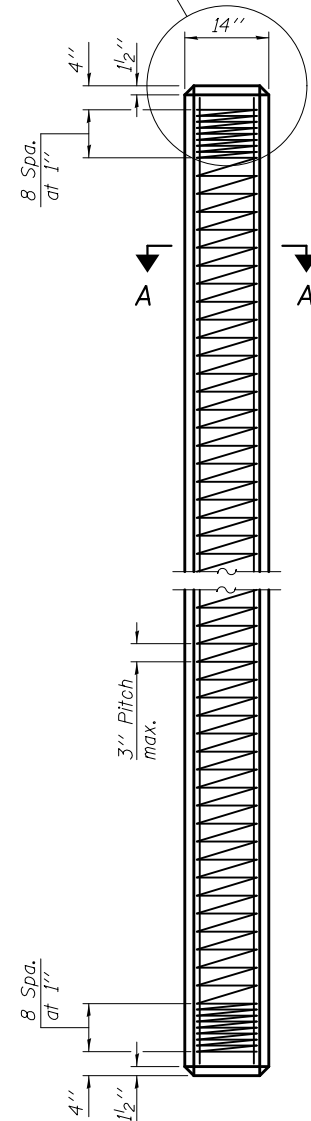
ELEVATION

SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

Note:
The metal shell piles shall be according to
ASTM A 252 Grade 3.

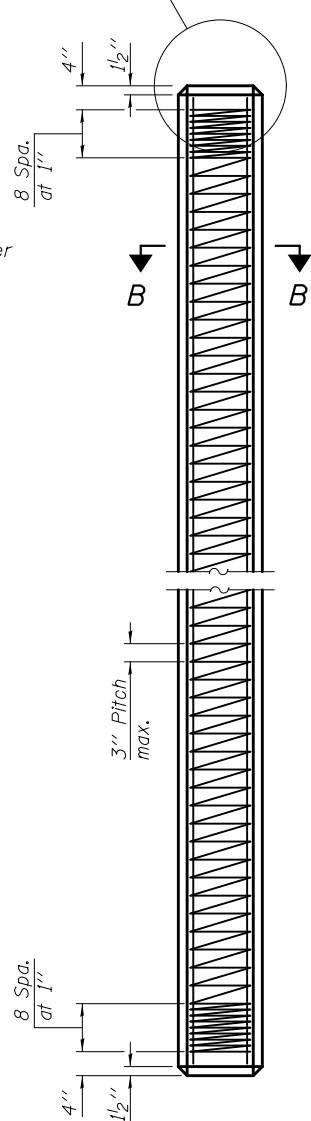
See End Plan and
End Elevation for
end reinforcement,
typ.



SECTION A-A

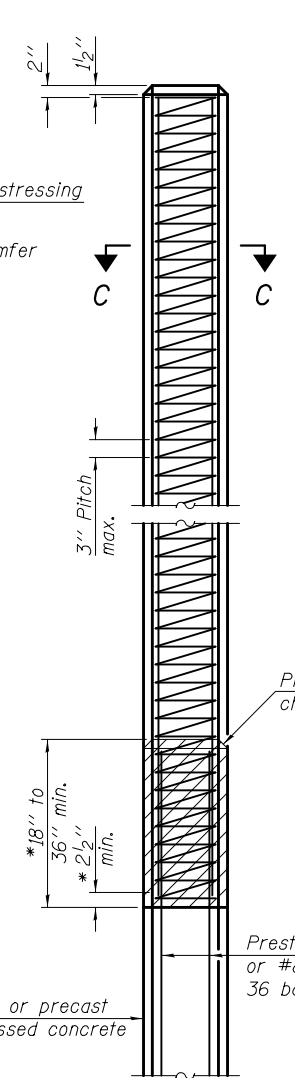
PRECAST CONCRETE PILE

See End Plan and
End Elevation for
end reinforcement,
typ.



SECTION B-B

PRECAST PRESTRESSED CONCRETE PILE

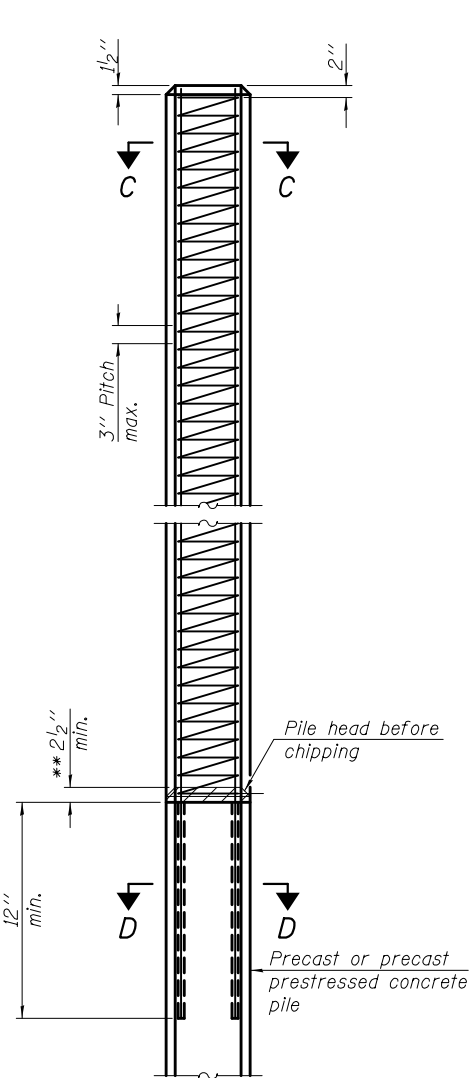


NOTES

Prestressing steel shall be uncoated high strength, low-relaxation 7-wire strand. The nominal diameter shall be 1/2" with a cross-sectional area of 0.153 in².
For Pile lengths up to 65', use two slings placed at a distance of 0.21 L* from each end. For Piles longer than 65', use three slings placed at a distance of 0.12 L* from each end and at midpoint of pile. *L= Overall length of pile to be handled.
For handling pile lengths up to 45', use two slings placed at a distance of 0.21 L from each end. For handling piles longer than 45', use three slings placed at a distance of 0.12 L from each end and at midpoint of pile.

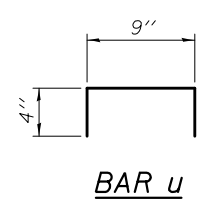
- * To construct pile extension , chip top of pile back 36 bar ϕ min. to expose vertical bars and lap vertical buildup bars. Remove spiral to 2 1/2" min. above chipping and provide full strength lap weld exterior face (4" min. length).
- ** To construct pile extension, chip top of pile back 2 1/2" to expose wire spiral and provide full strength lap weld exterior face (4" min. length).

ALTERNATE PILE EXTENSION

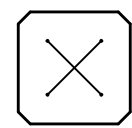


DESIGN STRESSES

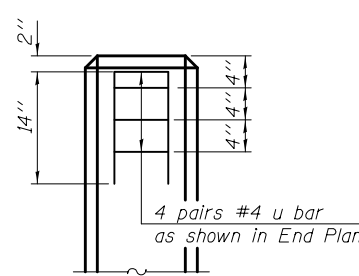
f'_c = 5,000 p.s.i.(prestressed)
 f'_c = 4,500 p.s.i. (precast)
 f'_{cl} = 4,000 p.s.i.
 f'_s = 270,000 p.s.i. (41,300 lbs.-1/2" ϕ)
 f_{sl} = 189,000 p.s.i. (28,900 lbs.-1/2" ϕ)



BAR u



END PLAN
(End reinforcement only)



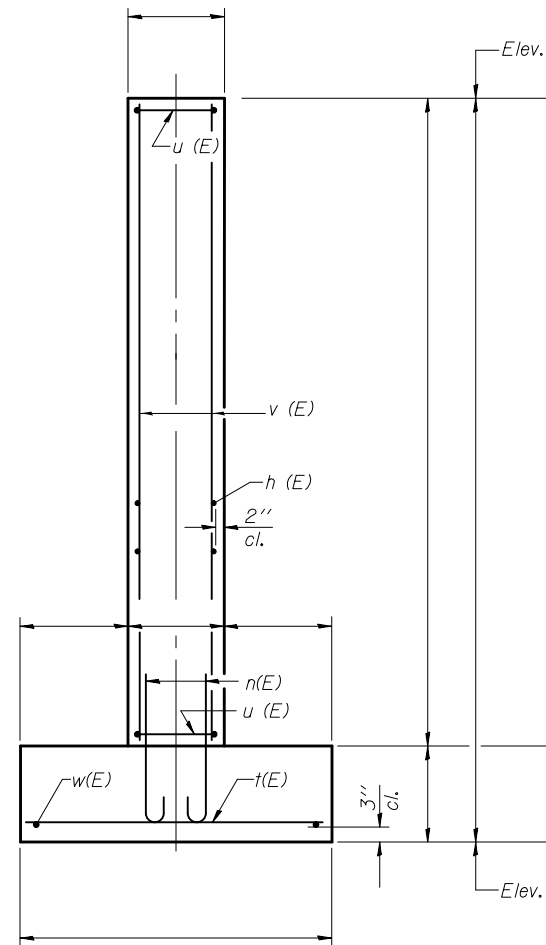
END ELEVATION
(End reinforcement only)

F-PC

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PRECAST PILE DETAILS STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.			
		CHECKED -	REVISED -										
	PLOT SCALE =	DRAWN -	REVISED -										
	PLOT DATE =	CHECKED -	REVISED -										
							CONTRACT NO.						
							ILLINOIS FED. AID PROJECT						

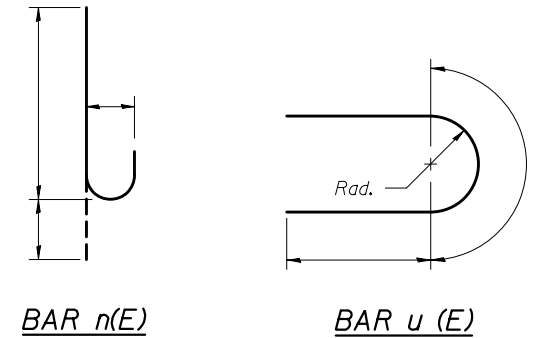
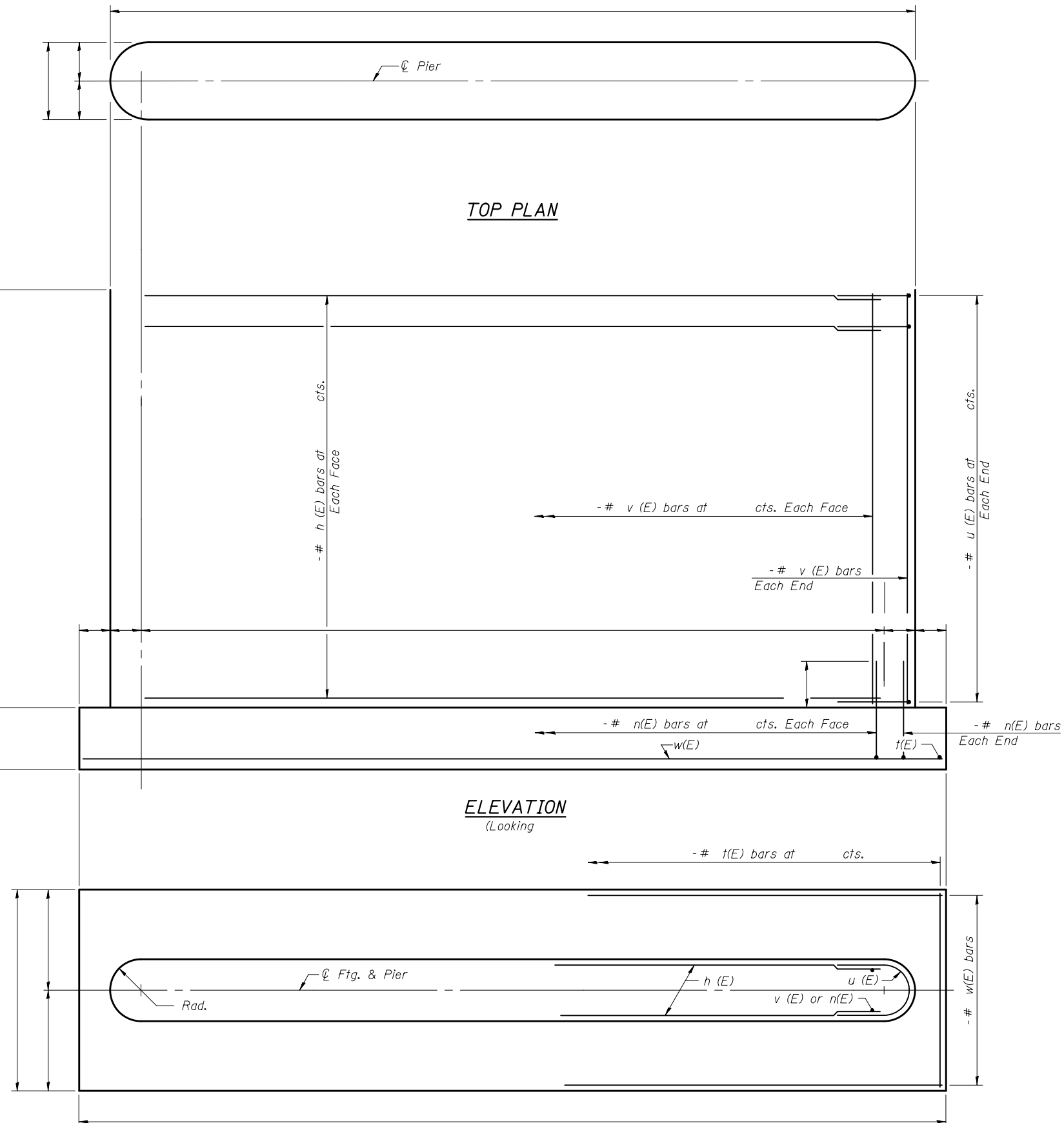
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.



END VIEW

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



BILL OF MATERIAL

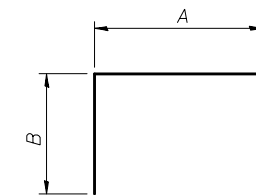
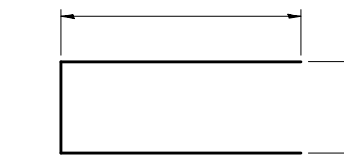
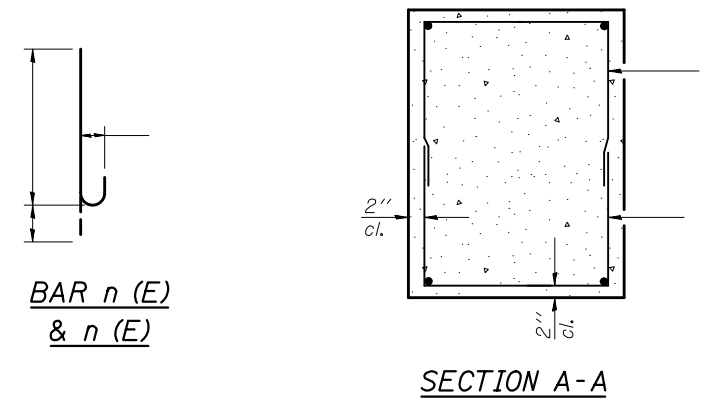
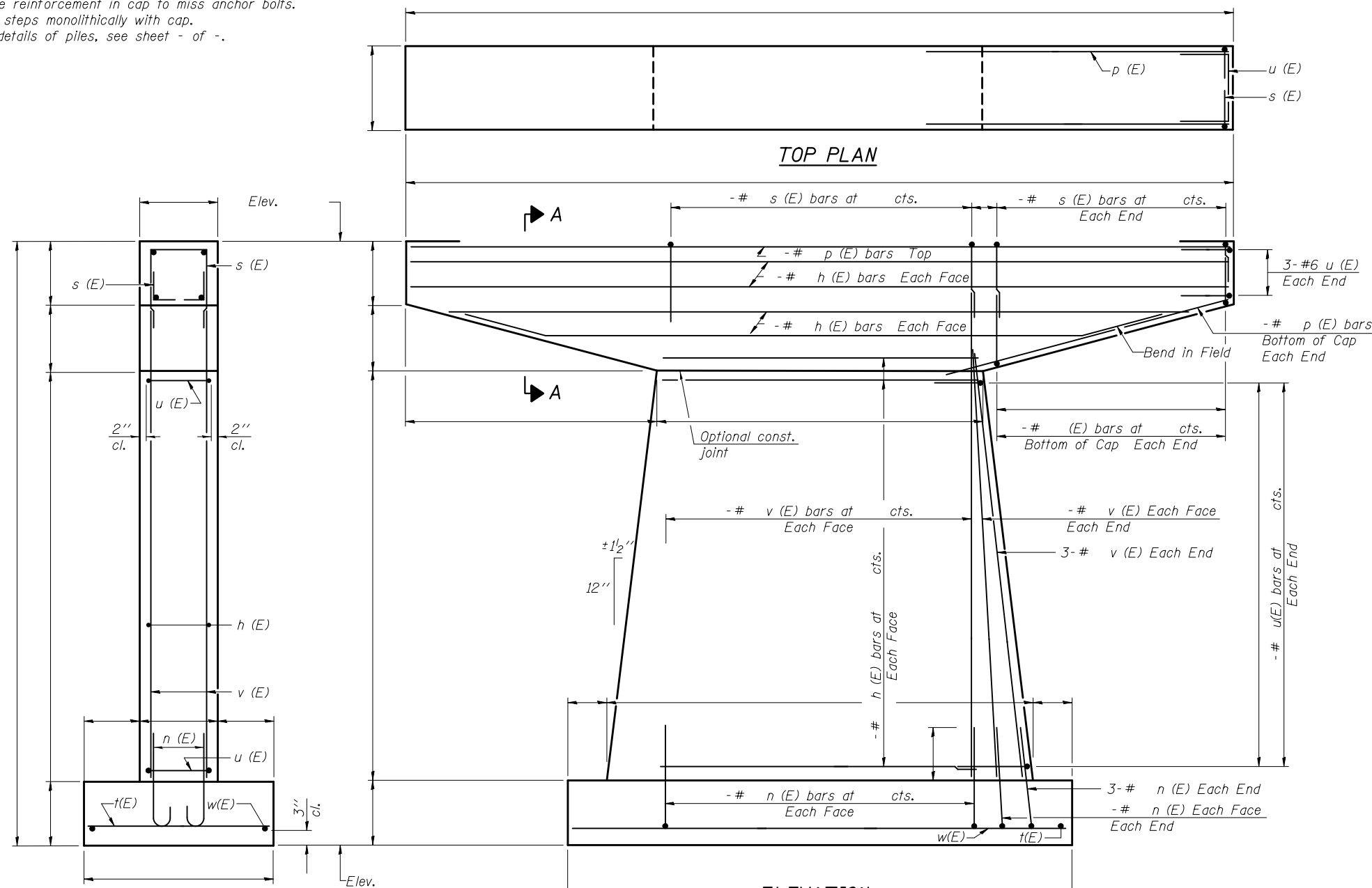
<i>Bar</i>	<i>No.</i>	<i>Size</i>	<i>Length</i>	<i>Shape</i>
<i>h (E)</i>		#		—
<i>n(E)</i>		#		⌋
<i>t (E)</i>		#		—
<i>u (E)</i>		#		⌋
<i>v (E)</i>		#		—
<i>w (E)</i>		#		—
<i>Structure Excavation</i>			<i>Cu. Yd.</i>	
<i>Concrete Structures</i>			<i>Cu. Yd.</i>	
<i>Reinforcement Bars, Epoxy Coated</i>			<i>Pound</i>	
<i>Furnishing - Piles,</i>			<i>Foot</i>	
<i>Driving Piles</i>			<i>Foot</i>	
<i>Test Pile,</i>			<i>Each</i>	

P-1

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	<div style="text-align: center;"> STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION </div>	<div style="text-align: center;"> PIER STRUCTURE NO. </div>	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED -	REVISED -							
	PLOT SCALE =	DRAWN -	REVISED -			<div style="text-align: center;"> CONTRACT NO. </div>				
	PLOT DATE =	CHECKED -	REVISED -							
						ILLINOIS FED. AID PROJECT				

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.



BARS

A & B DIMENSIONS

[illegible]

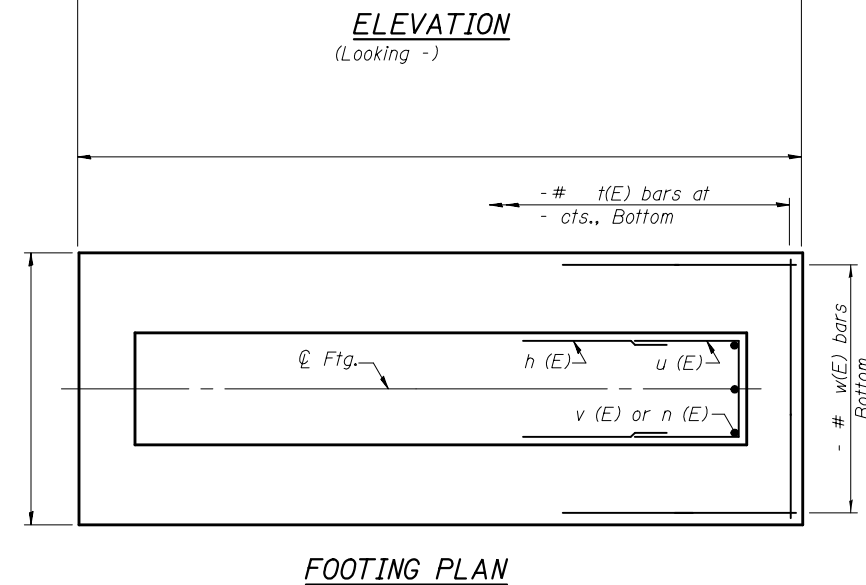
BARS

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
<i>h</i> (E)				_____
<i>h</i> (E)				_____
<i>n</i> (E)				┐_____
<i>p</i> (E)				=====
<i>p</i> (E)				=====
<i>s</i> (E)				┐_____
<i>s</i> (E)				┐_____
<i>s</i> (E)				┐_____
<i>t</i> (E)				=====
<i>u</i> (E)				┐=====
<i>v</i> (E)				=====
<i>w</i> (E)				=====
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

PILE DATA

Type: _____
Nominal Required Bearing: _____
Factored Resistance Available: _____
Est. Length: _____
No. Production Piles: _____
No. Test Piles: _____

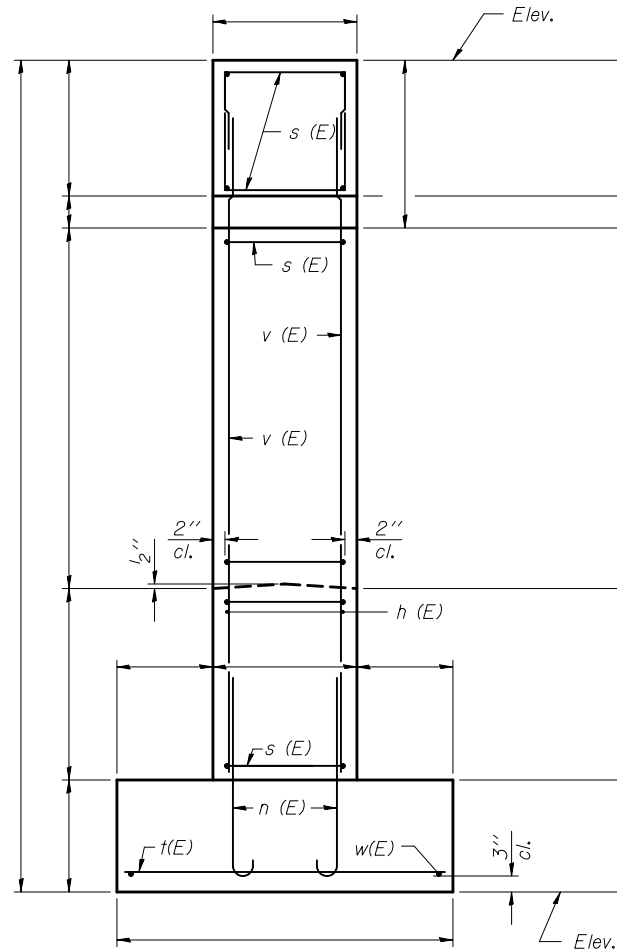


FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER STRUCTURE NO.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED -	REVISED -								
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO.					
	PLOT DATE =	CHECKED -	REVISED -			ILLINOIS FED. AID PROJECT					

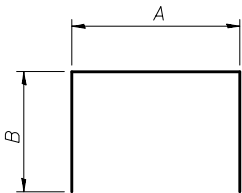
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



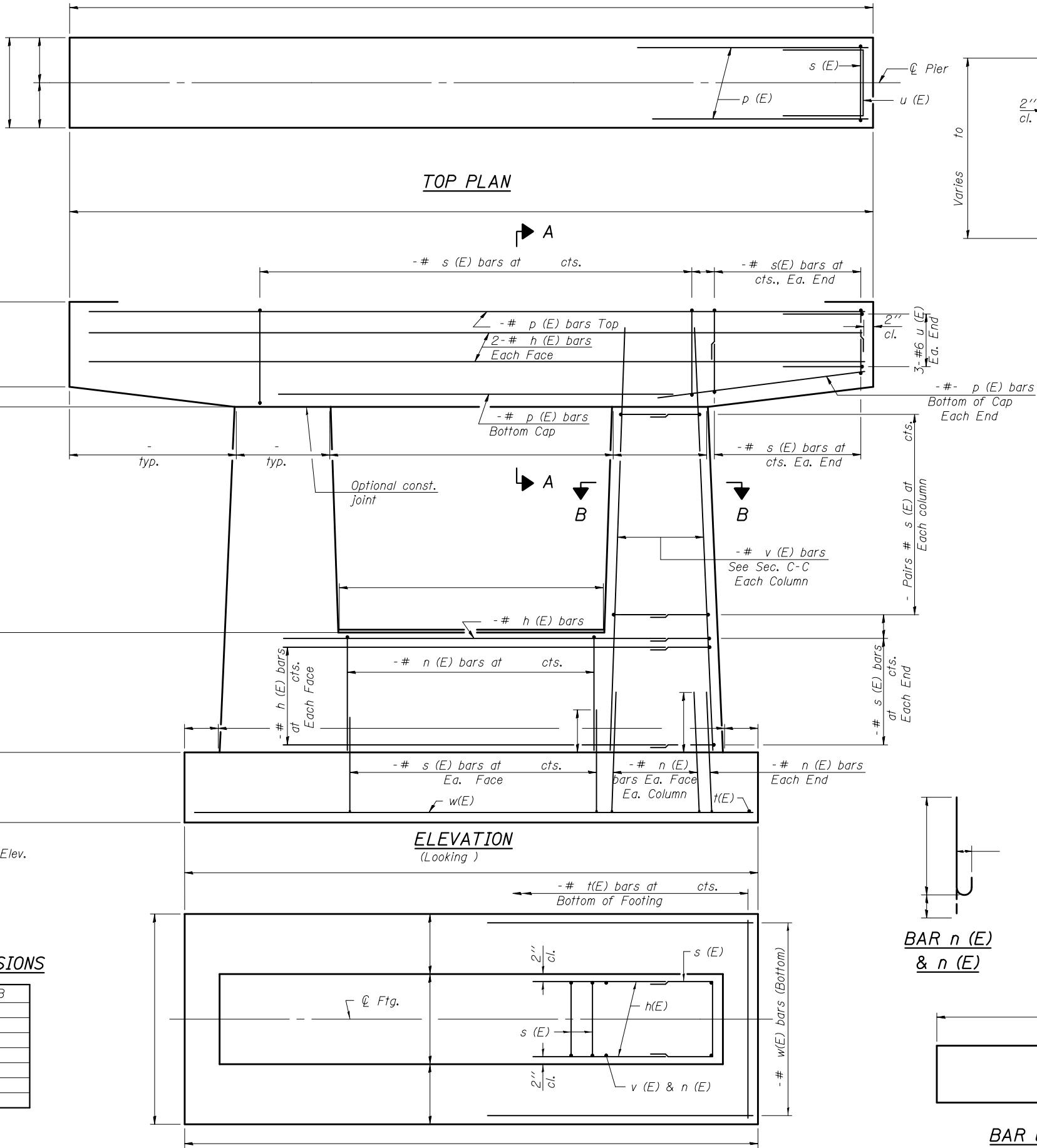
END VIEW



BARS

A & B DIMENSIONS

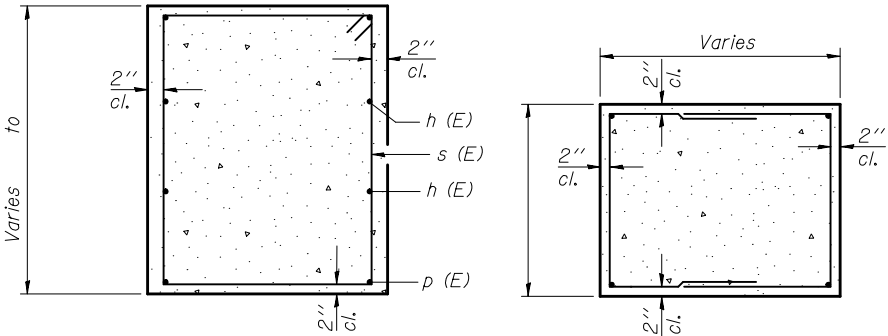
Bar	A	B



TOP PLAN

ELEVATION
(Looking)

FOOTING PLAN



SECTION A-A

SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h (E)				
h (E)				
n(E)				
n (E)				
p (E)				
p (E)				
p (E)				
s (E)				
s (E)				
s (E)				
t (E)				
u (E)				
v (E)				
w (E)				
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

BAR n (E)
& n (E)

BAR s (E)

BAR u (E)

P-3

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
STRUCTURE NO.

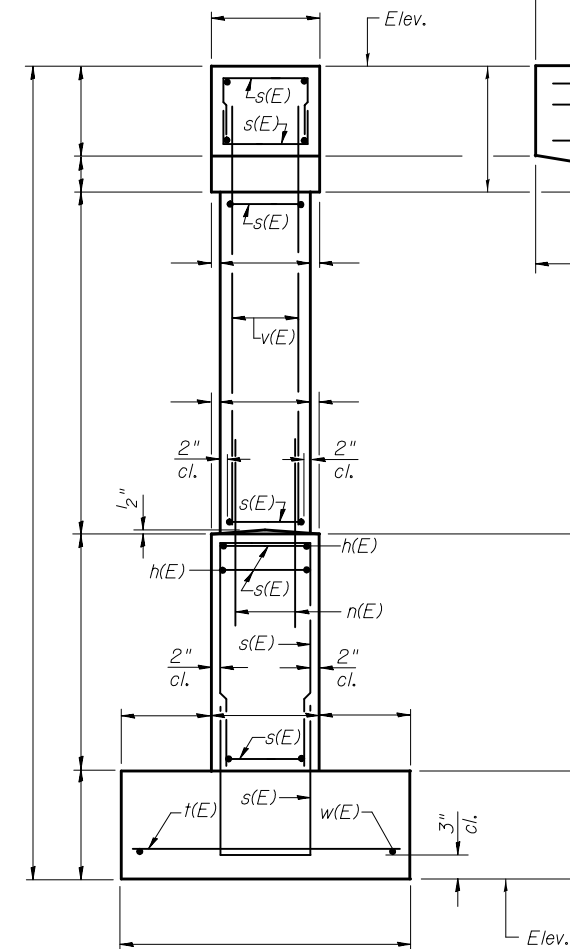
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

Bar	No.	Size	Length	Shape
<i>h</i> (E)				_____
<i>h</i> (E)				_____
<i>n</i> (E)				C_____
<i>p</i> (E)				_____
<i>p</i> (E)				_____
<i>p</i> (E)				_____
<i>s</i> (E)				□
<i>s</i> (E)				□
<i>s</i> (E)				□
<i>s</i> (E)				□
<i>s</i> (E)				□
<i>t</i> (E)				_____
<i>u</i> (E)				_____
<i>v</i> (E)				_____
<i>w</i> (E)				_____
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars,			Pound	
Epoxy Coated				
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

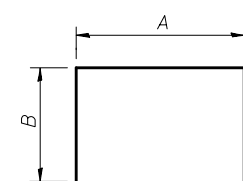
Notes:
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.
 For details of piles, see sheet - of - .

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:

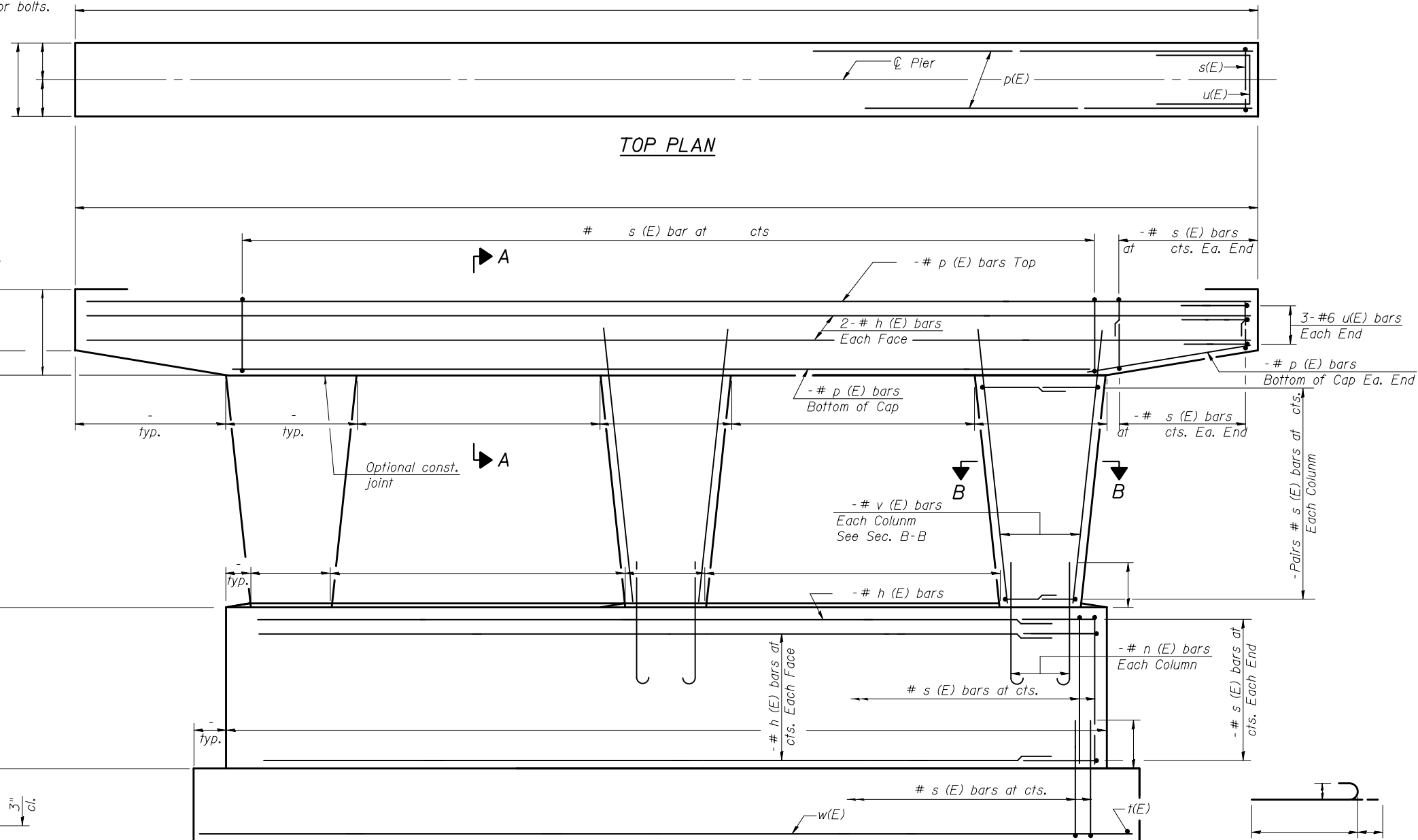


END VIEW

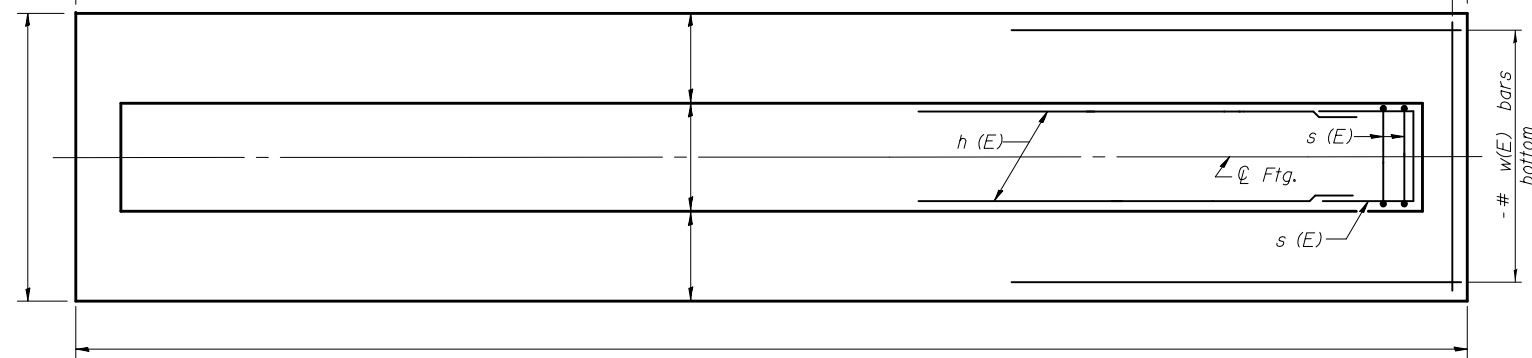


BARS

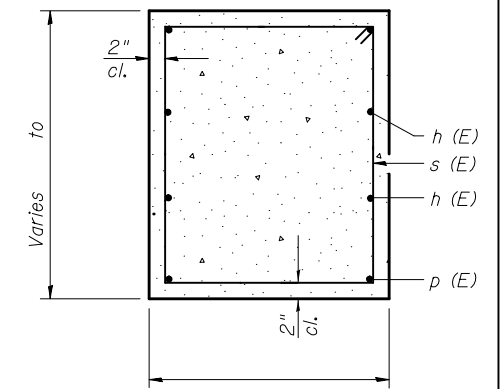
A & B DIMENSIONS

[illegible]

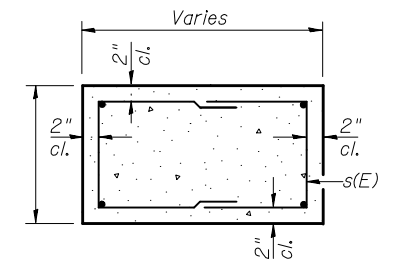
ELEVATION
(Looking)



FOOTING PLAN



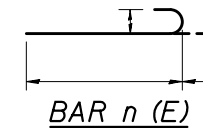
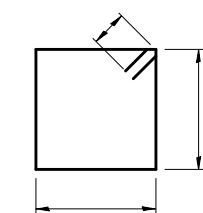
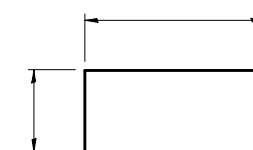
SECTION A-A



SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
<i>h</i> (E)				=====
<i>h</i> (E)				=====
<i>n</i> (E)				┌=====
<i>p</i> (E)				=====
<i>p</i> (E)				=====
<i>p</i> (E)				=====
<i>s</i> (E)				┐=====
<i>s</i> (E)				┐=====
<i>s</i> (E)				┐=====
<i>s</i> (E)				┐=====
<i>s</i> (E)				┐=====
<i>s</i> (E)				┐=====
<i>t</i> (E)				=====
<i>u</i> (E)				┌=====
<i>v</i> (E)				=====
<i>w</i> (E)				=====
<i>Structure Excavation</i>			<i>Cu. Yd.</i>	
<i>Concrete Structures</i>			<i>Cu. Yd.</i>	
<i>Reinforcement Bars,</i>			<i>Pound</i>	
<i>Epoxy Coated</i>				
<i>Furnishing - Piles,</i>			<i>Foot</i>	
<i>Driving Piles</i>			<i>Foot</i>	
<i>Test Pile,</i>			<i>Each</i>	


$$\underline{BAR\ n\ (E)}$$

$$\overline{BAR}_S(E)$$

$$BAR \cup (E)$$

P-5

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

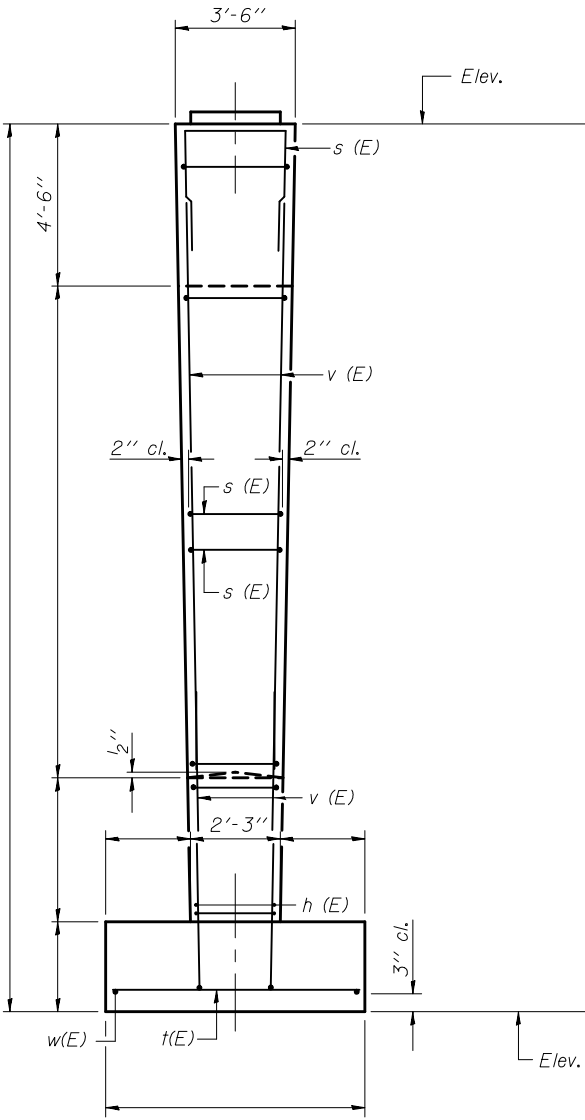
PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

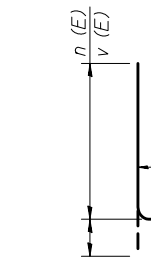
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

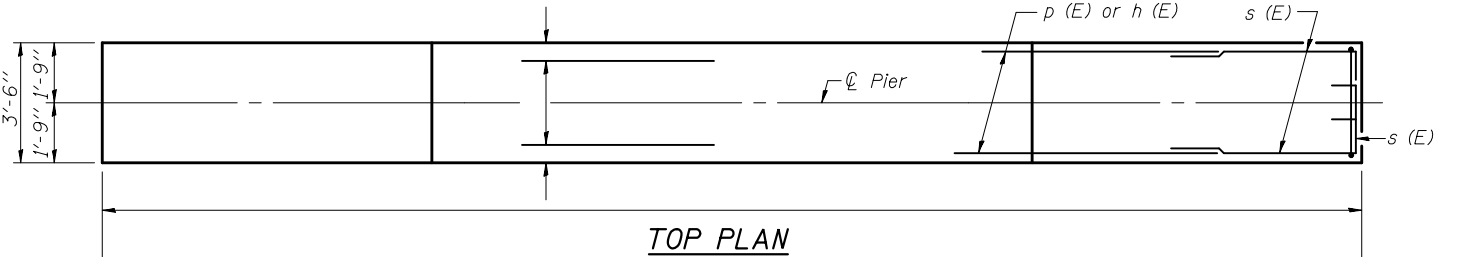
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



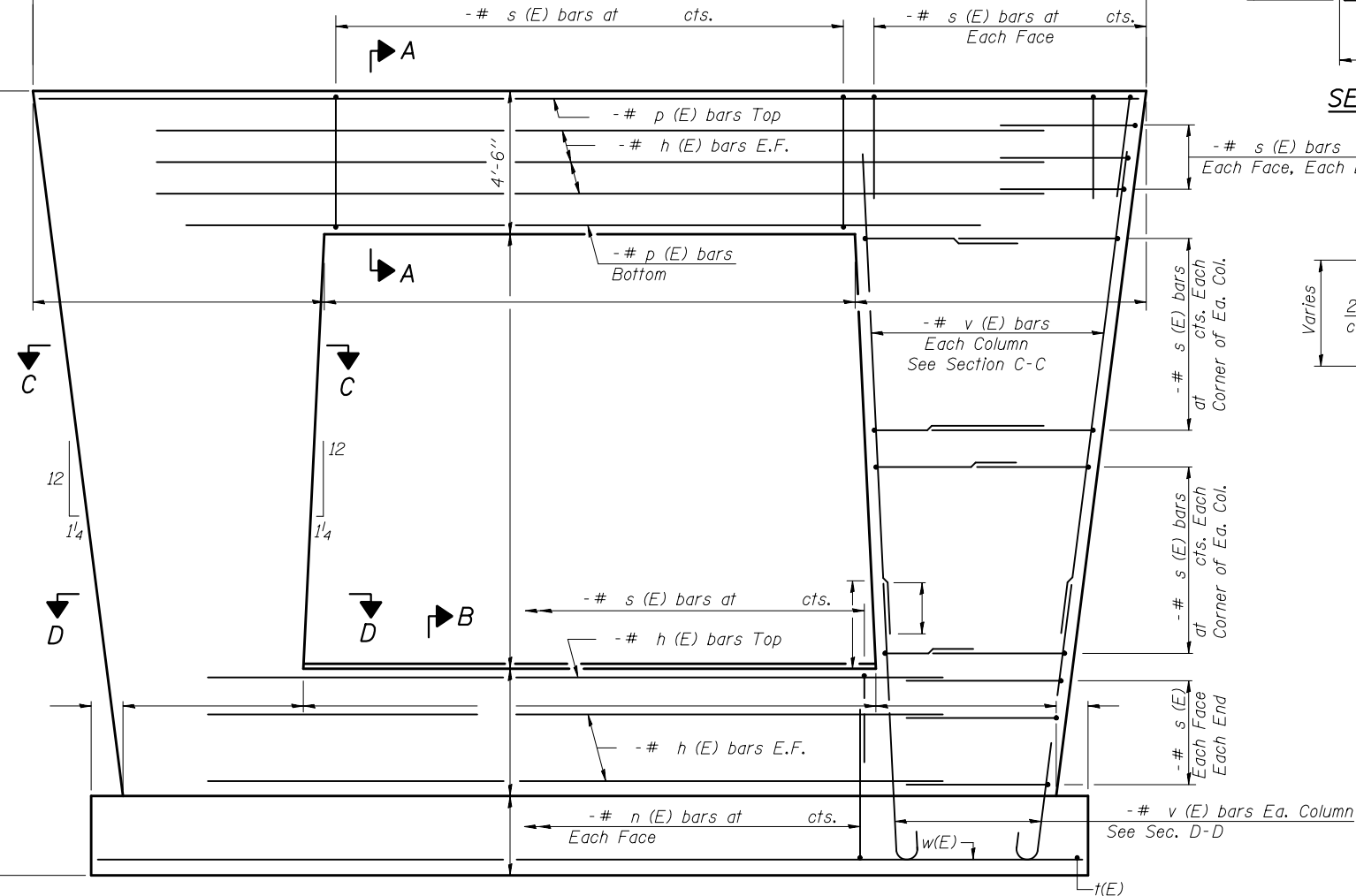
END VIEW



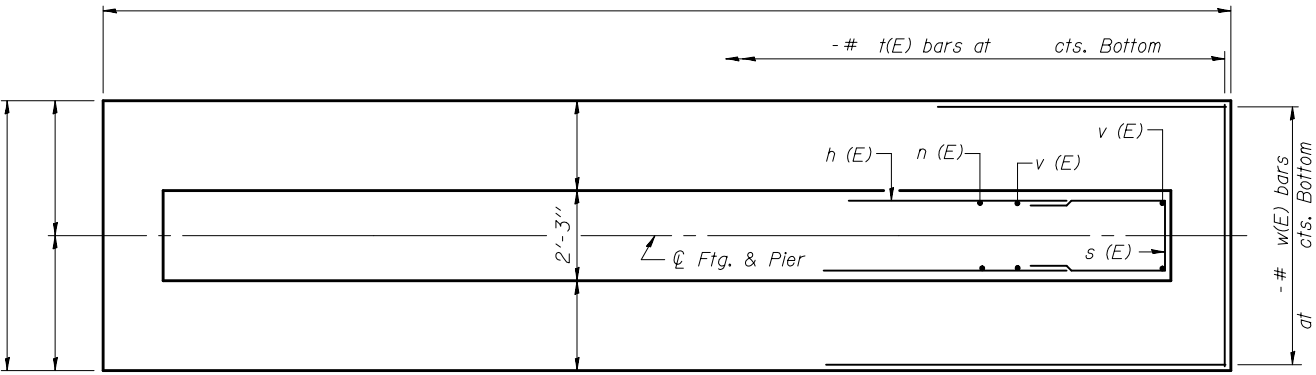
BARS n (E) & v (E)



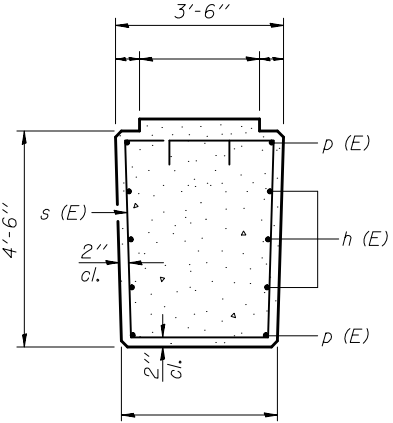
TOP PLAN



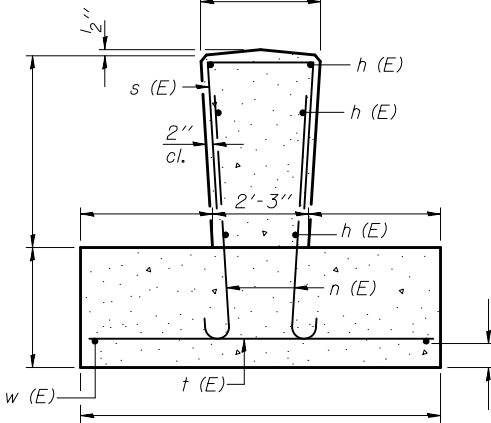
ELEVATION
(Looking)



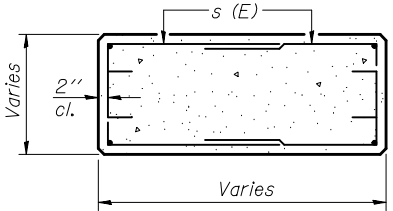
FOOTING PLAN



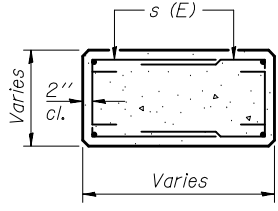
SECTION A-A



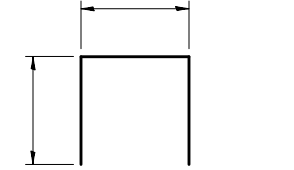
SECTION B-B



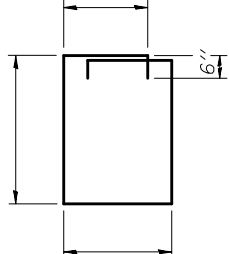
SECTION C-C



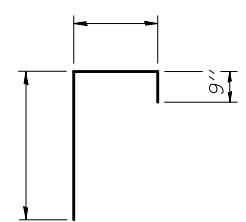
SECTION D-D



BARS s (E) & s (E)



BAR s (E)



BARS s (E) & s (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h (E)		#		
h (E)		#		
n (E)		#		
p (E)		#		
p (E)		#		
s (E)		#		
s (E)		#		
s (E)		#		
s (E)		#		
s (E)		#		
t(E)		#		
v (E)		#		
v (E)		#		
w(E)		#		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

P-7

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
STRUCTURE NO.

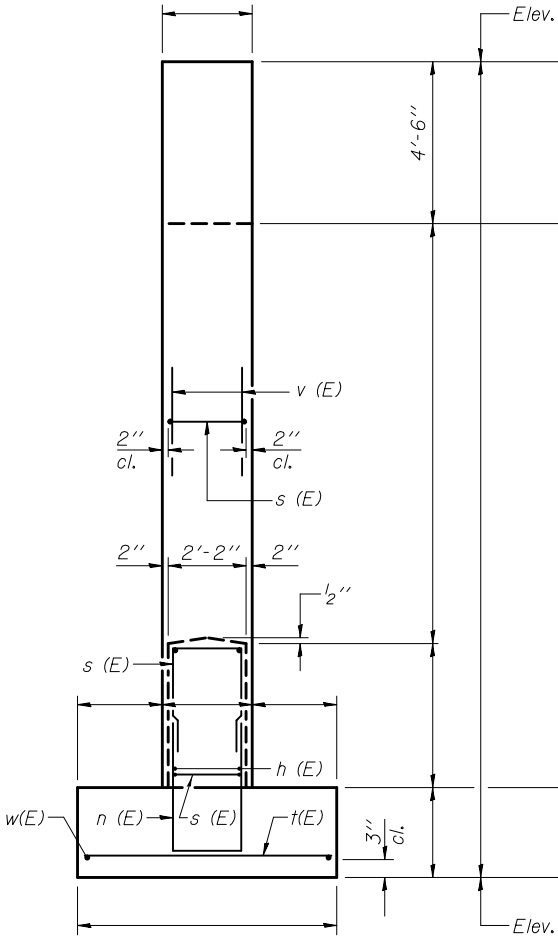
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

ILLINOIS	FED. AID PROJECT
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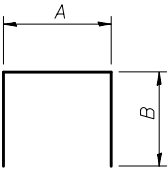
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



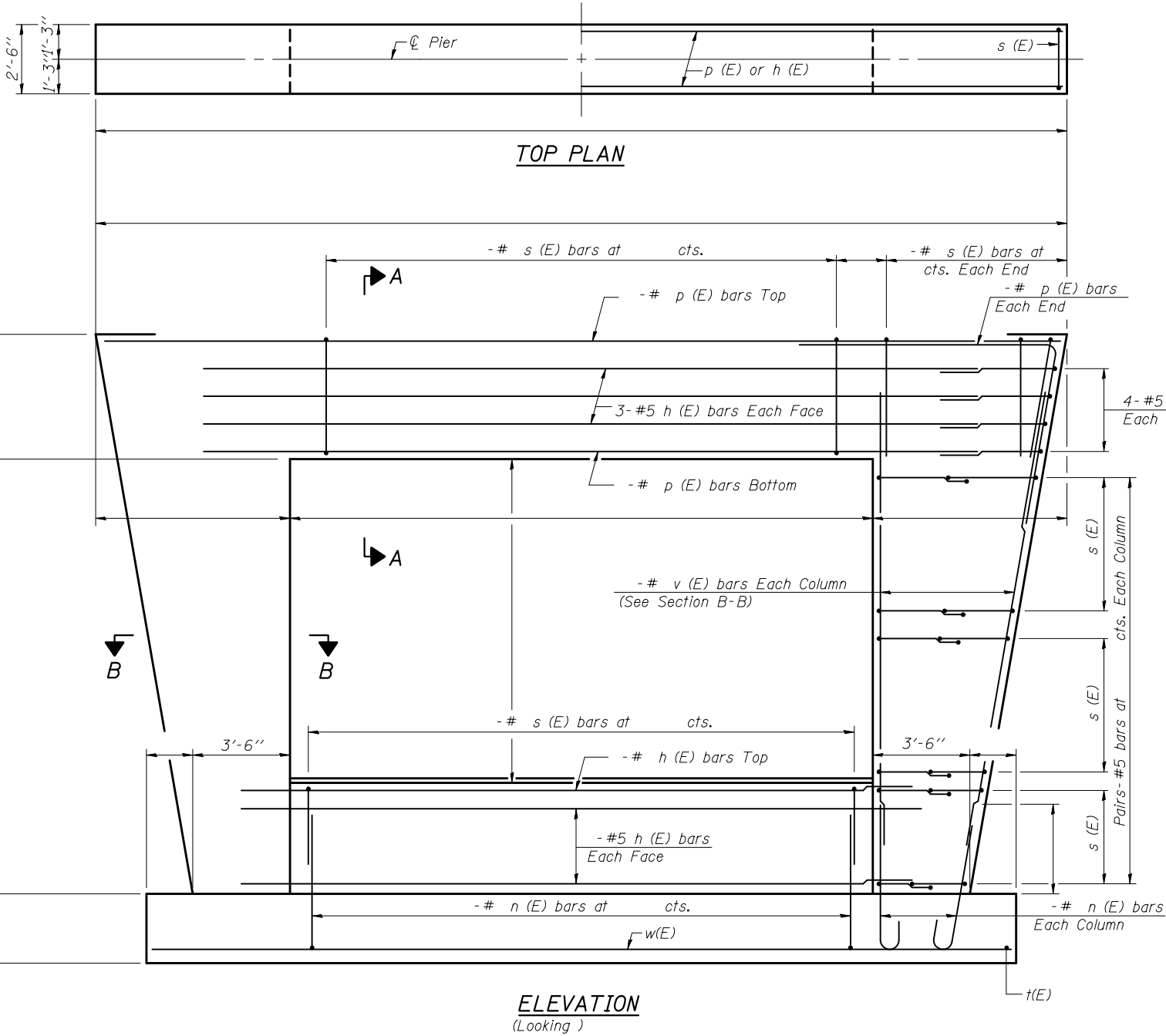
END VIEW



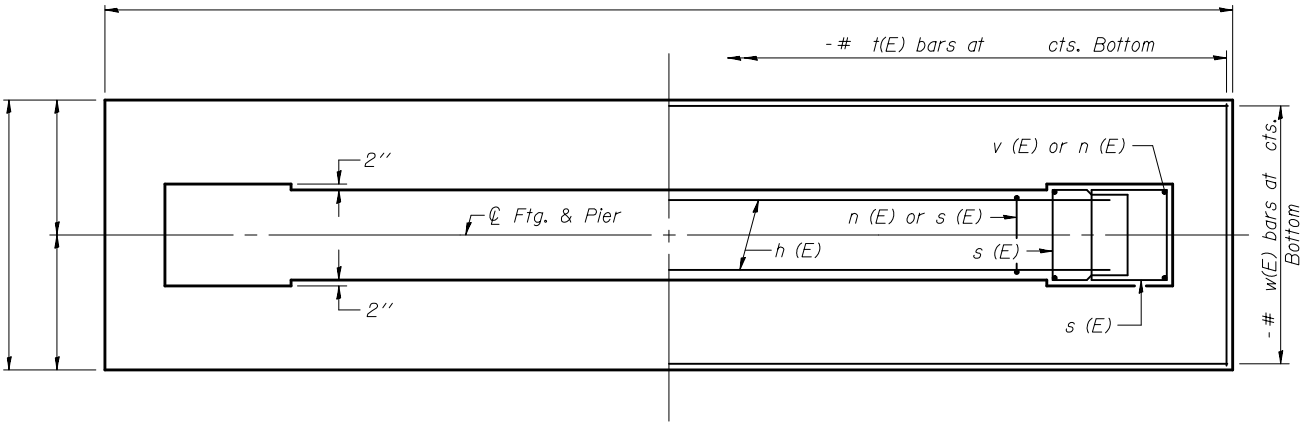
BARS

A & B DIMENSIONS

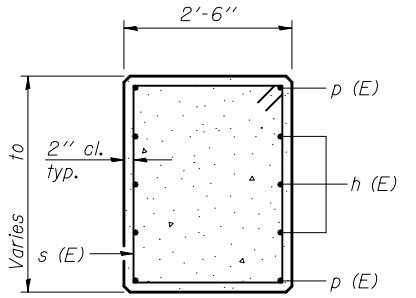
Bar	A	B



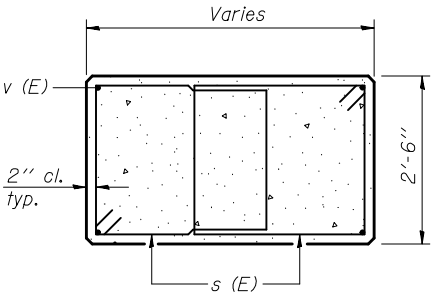
ELEVATION
(Looking)



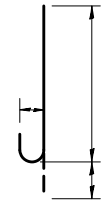
FOOTING PLAN



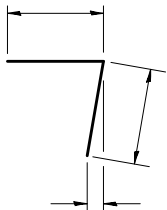
SECTION A-A



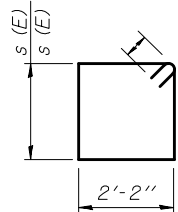
SECTION B-B



BAR n (E)



BAR p (E)



BARS s (E) & s (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h (E)		#		—
h (E)		#		—
n(E)		#		U
n (E)		#		U
p (E)		#		L
p (E)		#		L
p (E)		#		L
s (E)		#		□
s (E)		#		□
s (E)		#		□
s (E)		#		□
t (E)		#		—
v (E)		#		—
w (E)		#		—
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

P-11

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

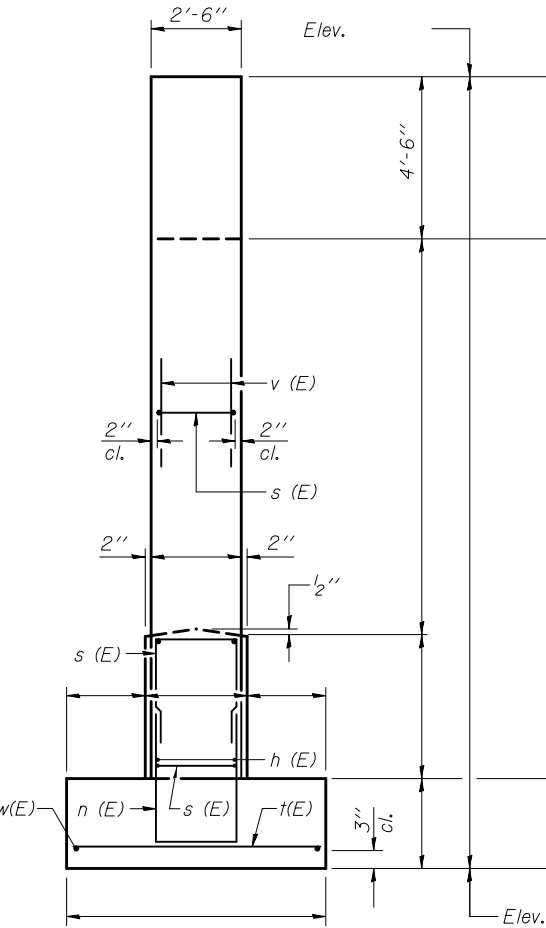
PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

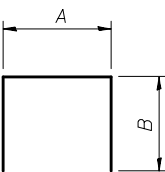
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



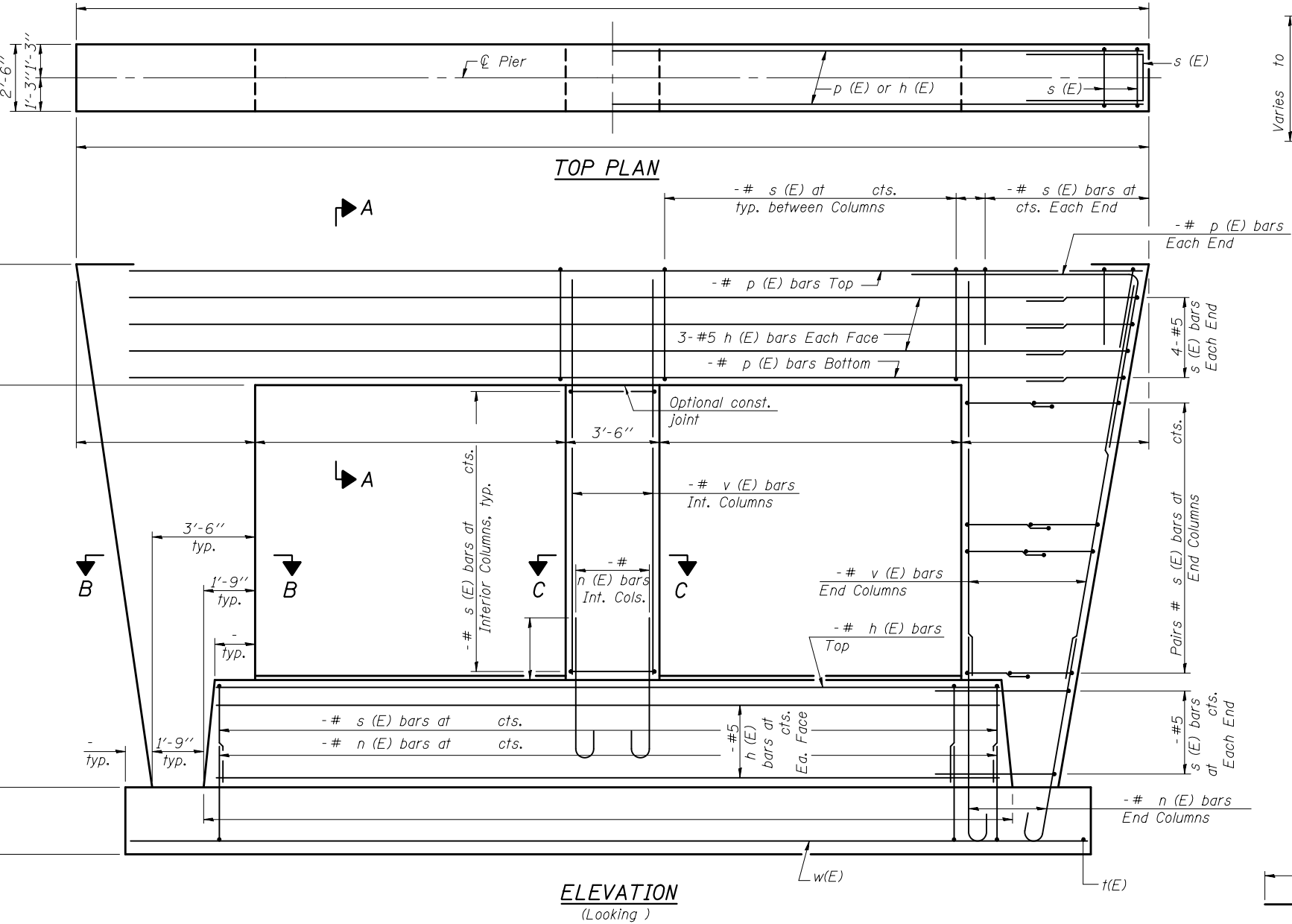
END VIEW



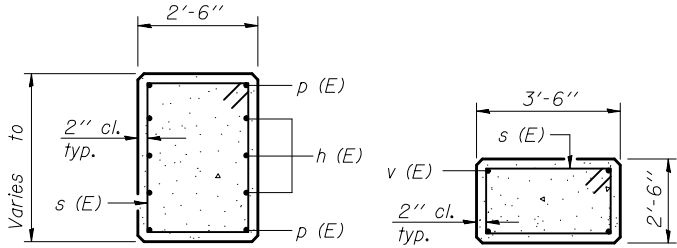
BARS

A & B DIMENSIONS

Bar	A	B

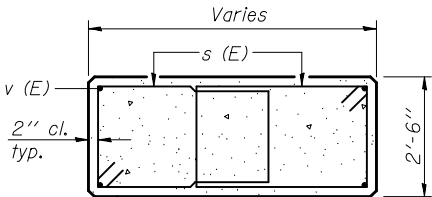


FOOTING PLAN

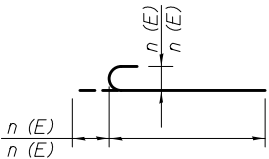


SECTION A-A

SECTION C-C



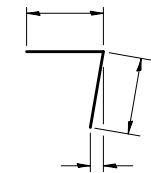
SECTION B-B



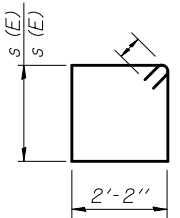
BARS n(E) & n(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)		#		
h(E)		#		
n(E)		#		
n(E)		#		
n(E)		#		
p(E)		#		
p(E)		#		
p(E)		#		
s(E)		#		
s(E)		#		
s(E)		#		
s(E)		#		
s(E)		#		
t(E)		#		
v(E)		#		
w(E)		#		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	



BAR p(E)



BARS s(E) & s(E)

P-12

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

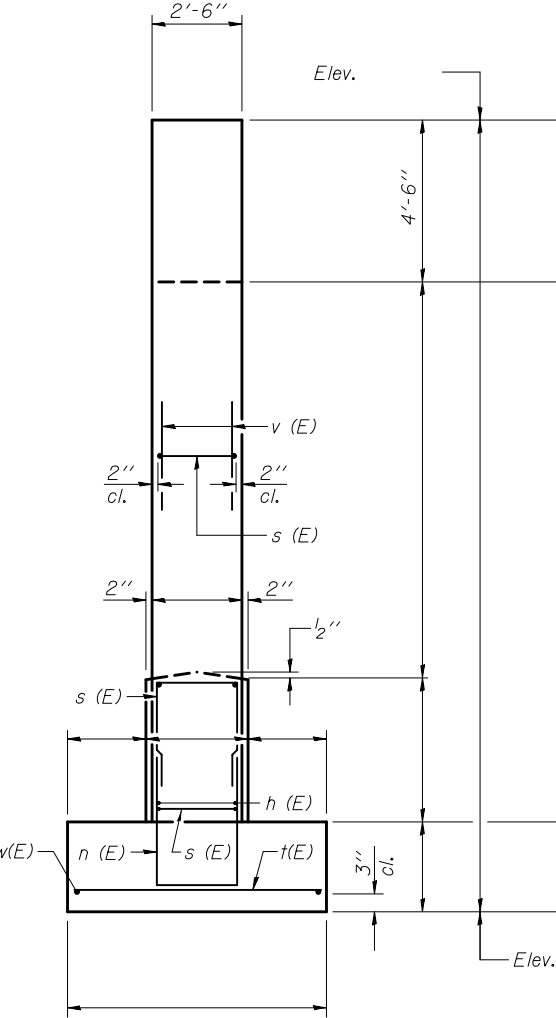
PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

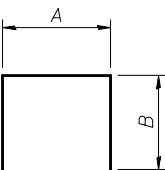
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



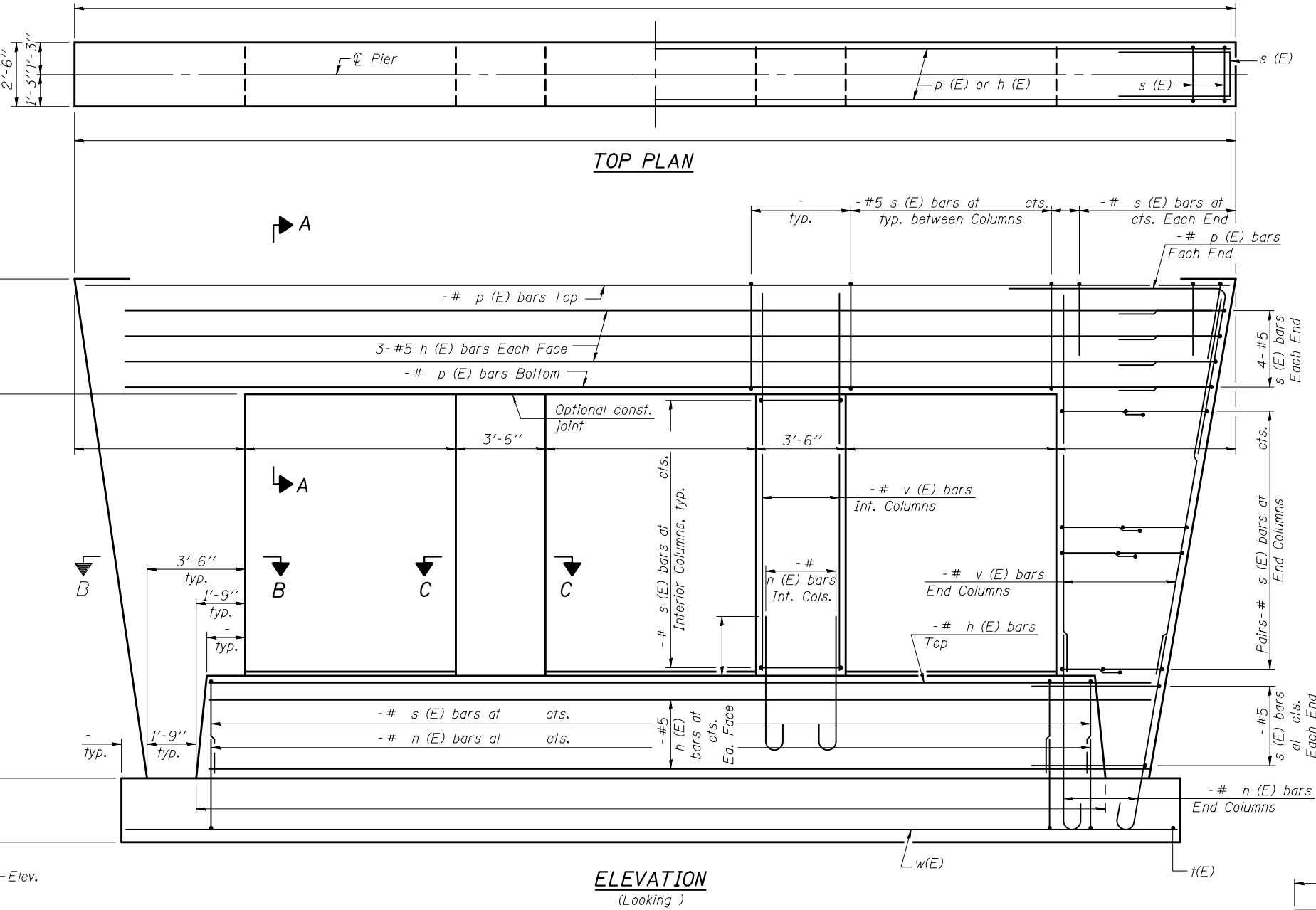
END VIEW



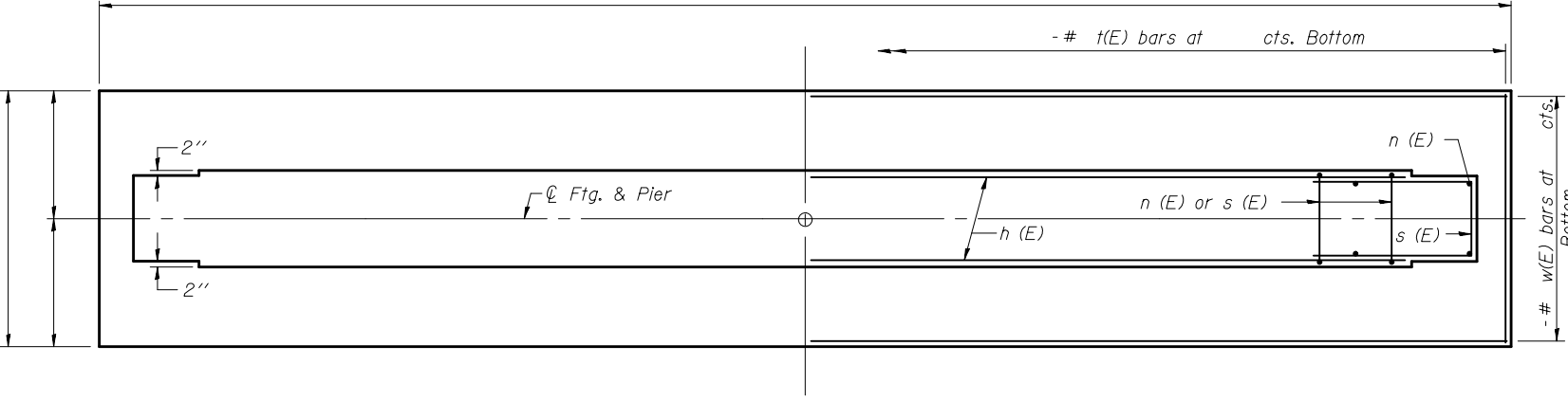
BARS

A & B DIMENSIONS

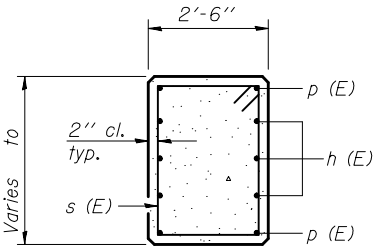
Bar	A	B



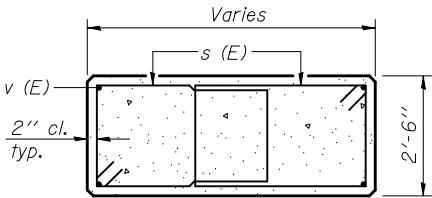
ELEVATION
(Looking)



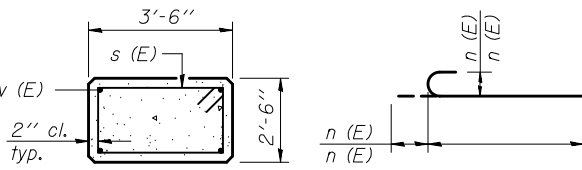
FOOTING PLAN



SECTION A-A



SECTION B-B

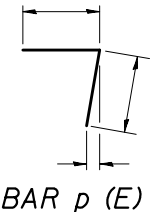


SECTION C-C

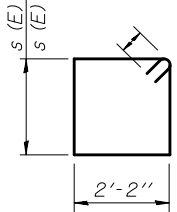
BARS n (E) & n (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h (E)		#		
h (E)		#		
n (E)		#		
n (E)		#		
n (E)		#		
p (E)		#		
p (E)		#		
p (E)		#		
s (E)		#		
s (E)		#		
s (E)		#		
s (E)		#		
s (E)		#		
t(E)		#		
v (E)		#		
w(E)		#		
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	



BAR p (E)



BARS s (E) & s (E)

P-13

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
STRUCTURE NO.

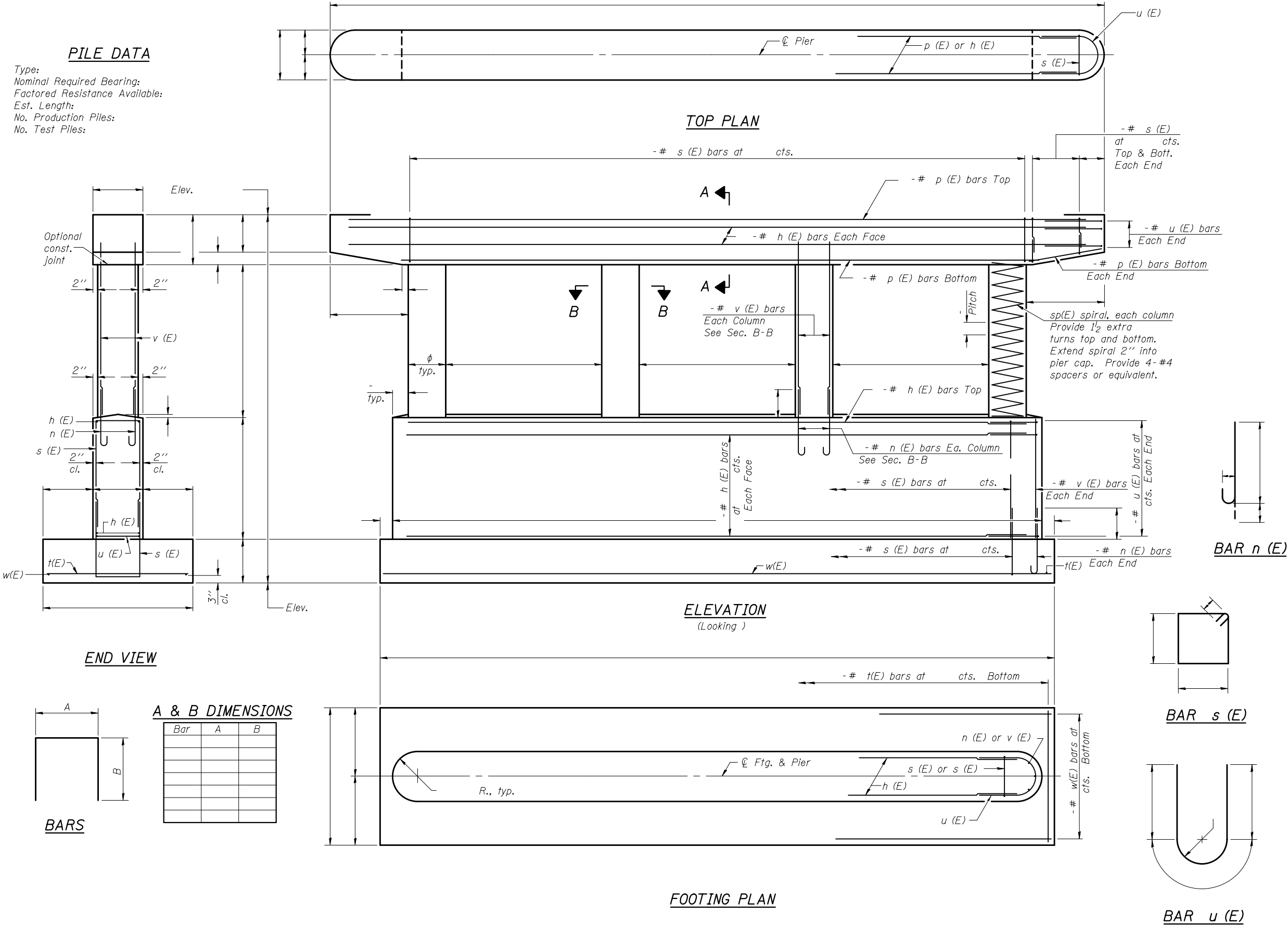
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



P-24

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

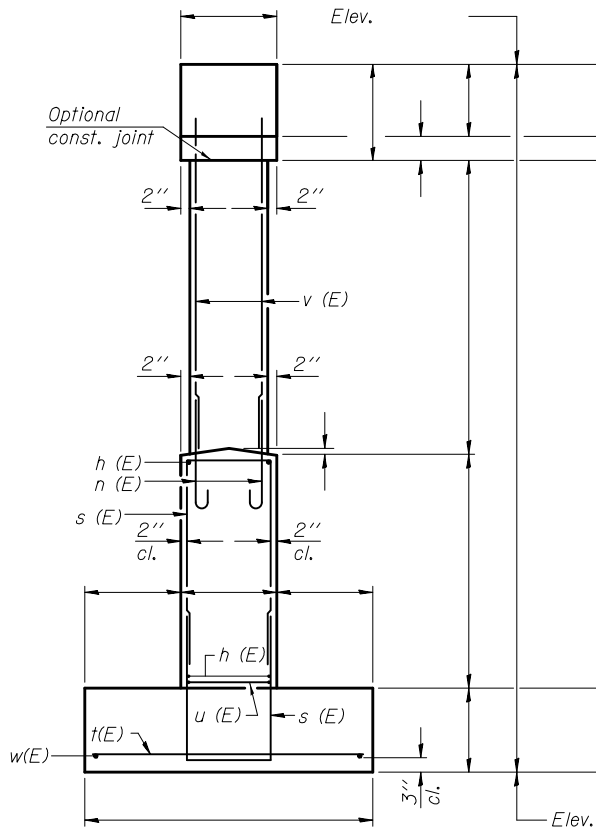
PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

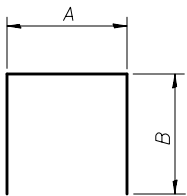
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



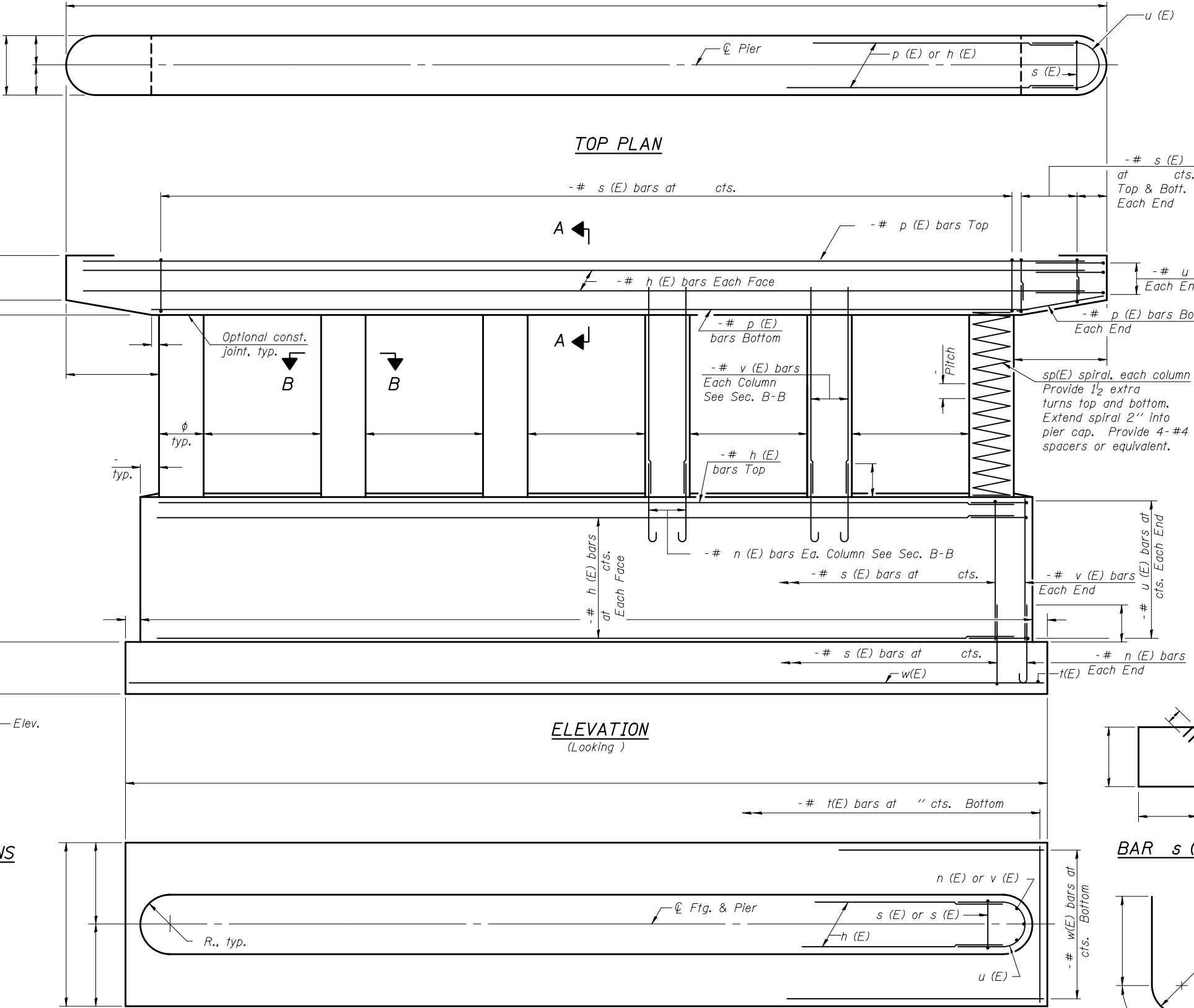
END VIEW



BARS

A & B DIMENSIONS

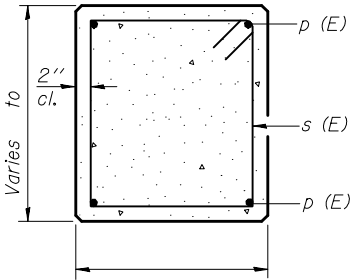
Bar	A	B



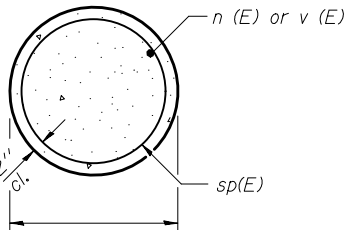
TOP PLAN

ELEVATION
(Looking)

FOOTING PLAN



SEC. A-A



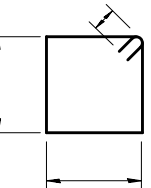
SEC. B-B

BAR n(E)

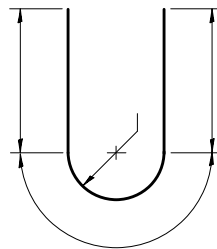
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)		#		—
n(E)		#		—
p(E)		#		—
p(E)		#		—
s(E)		#		—
s(E)		#		—
sp(E)		#		—
t(E)		#		—
u(E)		#		—
v(E)		#		—
w(E)		#		—
Structure Excavation		Cu. Yd.		
Concrete Structures		Cu. Yd.		
Reinforcement Bars, Epoxy Coated		Pound		
Furnishing - Piles,		Foot		
Driving Piles		Foot		
Test Pile,		Each		

** Length is height of spiral.



BAR s(E)



BAR u(E)

P-26

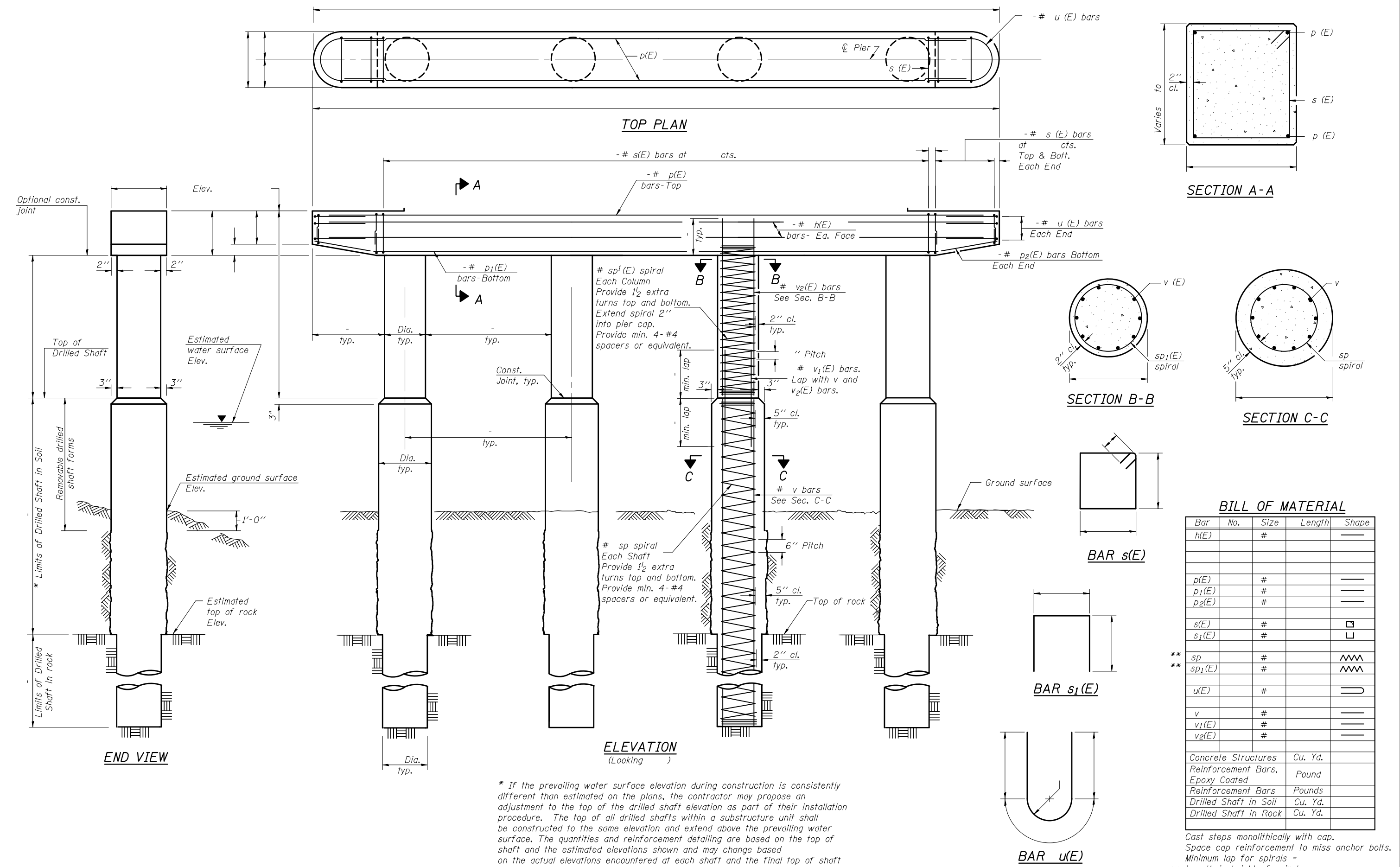
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)		#		—
p(E)		#		—
p1(E)		#		—
p2(E)		#		—
s(E)		#		□
s1(E)		#		U
sp		#		~
sp1(E)		#		~
u(E)		#		U
v		#		—
v1(E)		#		—
v2(E)		#		—
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Reinforcement Bars			Pounds	
Drilled Shaft in Soil			Cu. Yd.	
Drilled Shaft in Rock			Cu. Yd.	

Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Minimum lap for spirals =
** Length is height of spiral.

P-DS

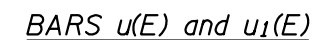
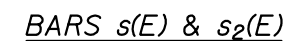
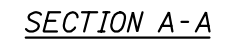
7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -








STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		—
$h_1(E)$		#		—
$p(E)$		#		—
$p_1(E)$		#		—
$p_2(E)$		#		—
$s(E)$		#		
$s_1(E)$		#		
$s_2(E)$		#5		
sp		#		
$sp_1(E)$		#		
$u(E)$		#		
$u_1(E)$		#		
v		#		—
$v_1(E)$		#		—
$v_2(E)$		#		—
Concrete Structures			Cu. Yd.	
Reinforcement Bars			Pound	
Reinforcement Bars, Epoxy Coated			Pound	
Drilled Shaft in Soil			Cu. Yd.	
Drilled Shaft in Rock			Cu. Yd.	

✱ ✱

✱ ✱

✱ ✱

✱ ✱

Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Minimum lap for spirals =
* Length is height of spiral.

P-DSCW

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
		TULN015 FED. AID PROJECT		

Pay limits for the Permanent Casing are based on the minimum length shown.



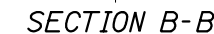
P-DSSW

11-26-12

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

Construction Sequence for encasement walls:

1. Excavate through water, between and outside of shafts, to base of lower encasement wall.
2. Set lower encasement wall forms into place through water and secure at top and bottom as required to maintain proper clearance from shaft.
3. Place the lower encasement wall reinforcement cage into forms using spacers to maintain proper clearances from shaft and forms.
4. If the forms can be sealed against the streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
5. Prepare construction joint at top of drilled shafts and lower encasement wall.
6. Splice upper encasement wall reinforcement and cage length to lower encasement and shaft reinforcement, form and pour upper encasement wall.



A, B & C DIMENSIONS

Bar	A	B	C
$u(E)$			
$u_I(E)$			

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		—
$h_1(E)$		#		—
$p(E)$		#		—
$p_1(E)$		#		—
$p_2(E)$		#		—
$s(E)$		#		☐
$s_1(E)$		#		└
** ** sp		#		〰〰〰
$sp_1(E)$		#		〰〰〰
$u(E)$		#		┐
$u_1(E)$		#		┐
v		#		—
$v(E)$		#		—
$v_1(E)$		#		—
$v_2(E)$		#		—
Concrete Structures			Cu. Yd.	
Reinforcement Bars			Pound	
Reinforcement Bars, Epoxy Coated			Pound	
Underwater Structure Excavation Protection, Location			Each	
Drilled Shaft in Soil			Cu. Yd.	
Drilled Shaft in Rock			Cu. Yd.	
Permanent Casing			Foot	

→

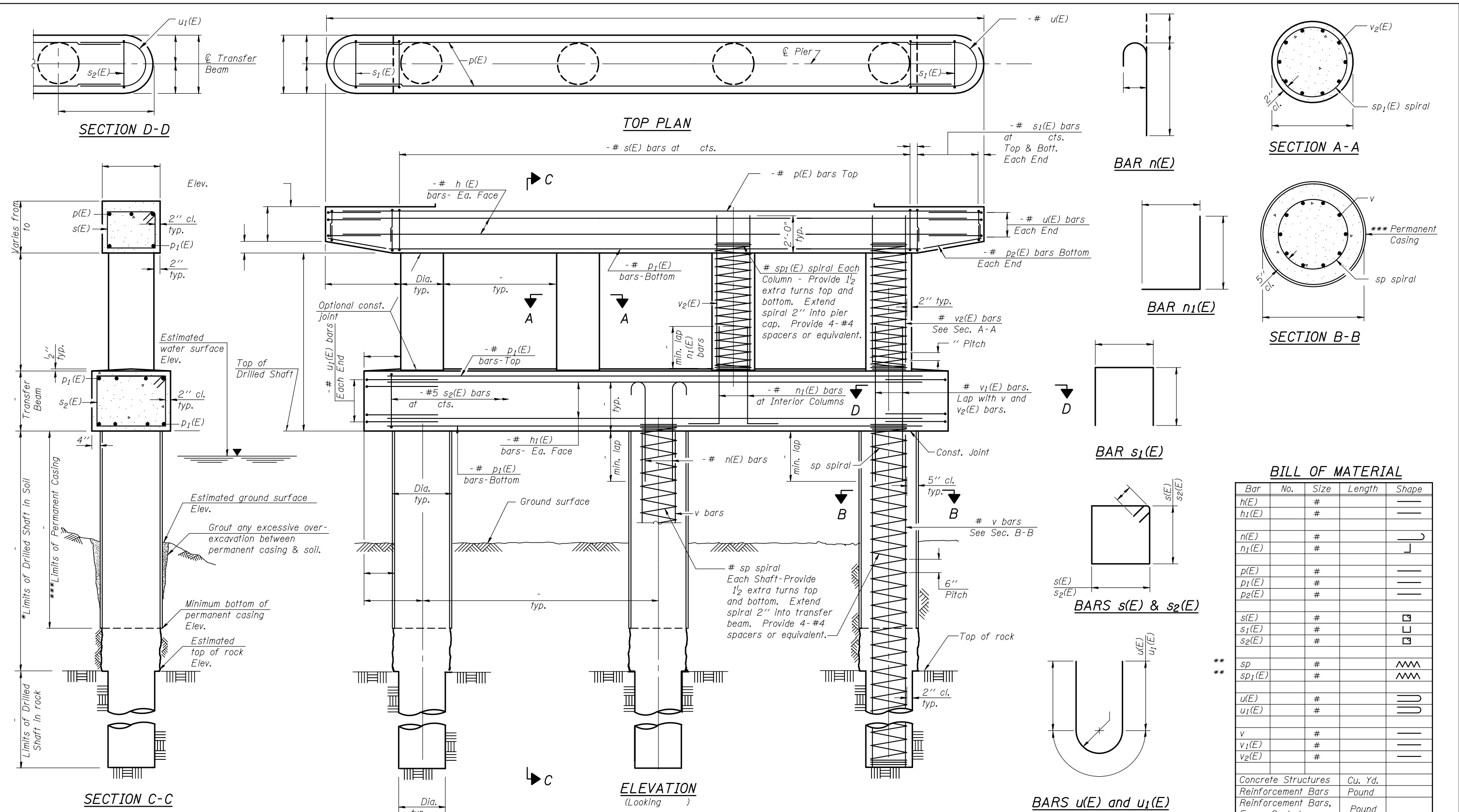
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
ILLINOIS		FED. AID PROJECT		



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$		#		—
$h_1(E)$		#		—
$n(E)$		#		⌋
$n_1(E)$		#		⌋
$p(E)$		#		—
$p_1(E)$		#		—
$p_2(E)$		#		—
$s(E)$		#		⊠
$s_1(E)$		#		⊠
$s_2(E)$		#		⊠
sp		#		⋈
$sp_1(E)$		#		⋈
$u(E)$		#		⌋
$u_1(E)$		#		⌋
v		#		—
$v_1(E)$		#		—
$v_2(E)$		#		—
Concrete Structures			Cu. Yd.	
Reinforcement Bars			Pound	
Reinforcement Bars, Epoxy Coated			Pound	
Drilled Shaft in Soil			Cu. Yd.	
Drilled Shaft in Rock			Cu. Yd.	
Permanent Casing			Foot	

Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Minimum lap for spirals =
** Length is height of spiral.

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

*** Contractor is responsible for determining the casing thickness and the actual tip elevation to be used. See Article 516.06(d) of the Standard Specifications.
Pay limits for the Permanent Casing shall be based on the minimum length shown.

P-DSTB

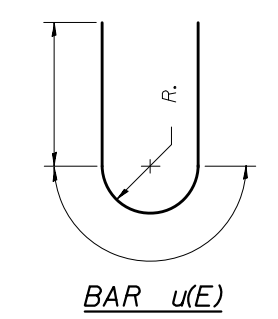
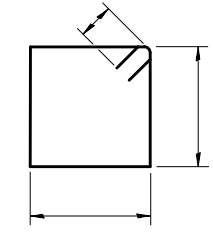
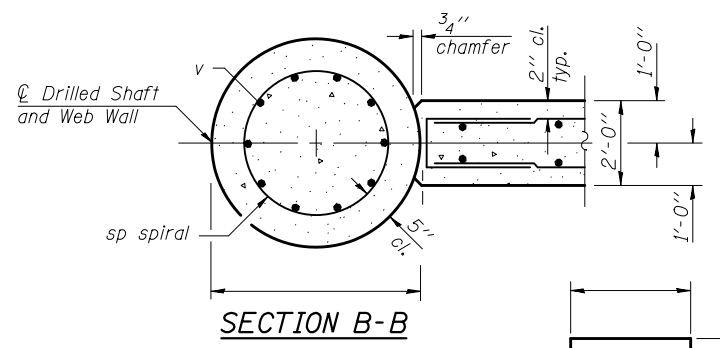
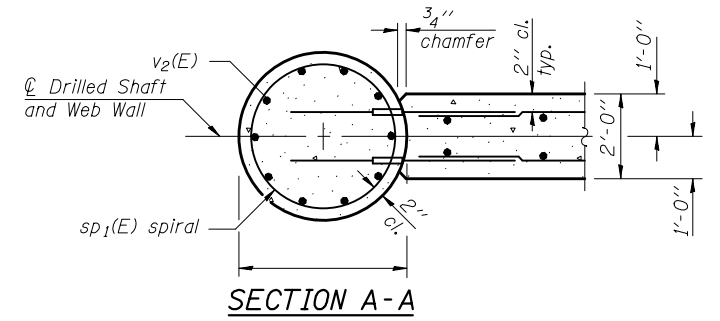
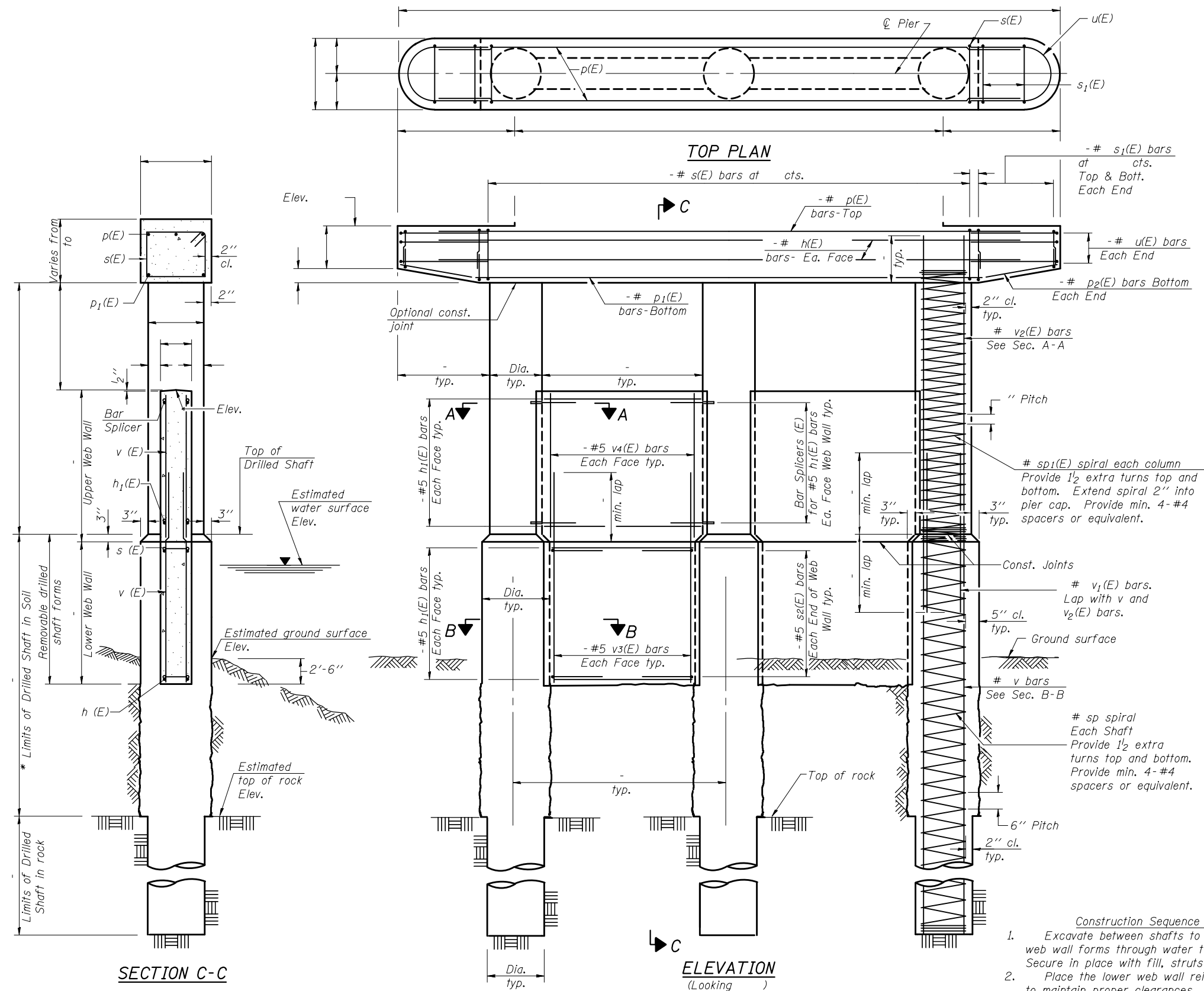
7-1-10

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	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER
STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



BARS s₁(E) & s₂(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)		#		—
h ₁ (E)		#		—
p(E)		#		—
p ₁ (E)		#		—
p ₂ (E)		#		—
s(E)		#		□
s ₁ (E)		#		□
s ₂ (E)		#		□
sp		#		~
sp ₁ (E)		#		~
u(E)		#		U
v		#		—
v ₁ (E)		#		—
v ₂ (E)		#		—
v ₃ (E)		#		—
v ₄ (E)		#		—
Concrete Structures			Cu. Yd.	
Reinforcement Bars			Pound	
Reinforcement Bars, Epoxy Coated			Pound	
Underwater Structure Excavation Protection Location			Each	
Bar Splicers			Each	
Drilled Shaft in Soil			Cu. Yd.	
Drilled Shaft in Rock			Cu. Yd.	

Cast steps monolithically with cap.
 Space cap reinforcement to miss anchor bolts.
 Minimum lap for spirals =
 ** Length is height of spiral.

- Construction Sequence for Web Wall:**
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
 - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
 - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
 - Construct Columns.
 - Construct upper web walls.

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

P-DSWW

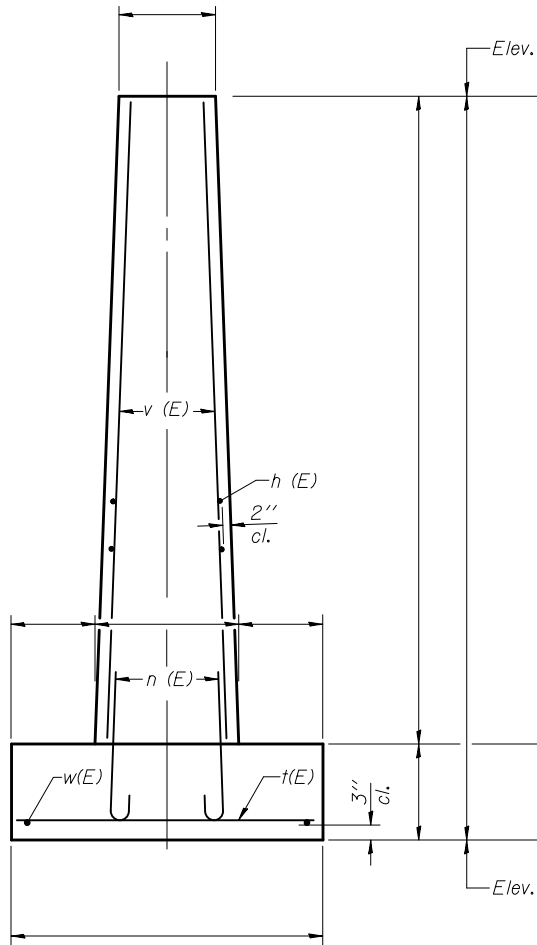
11-26-12

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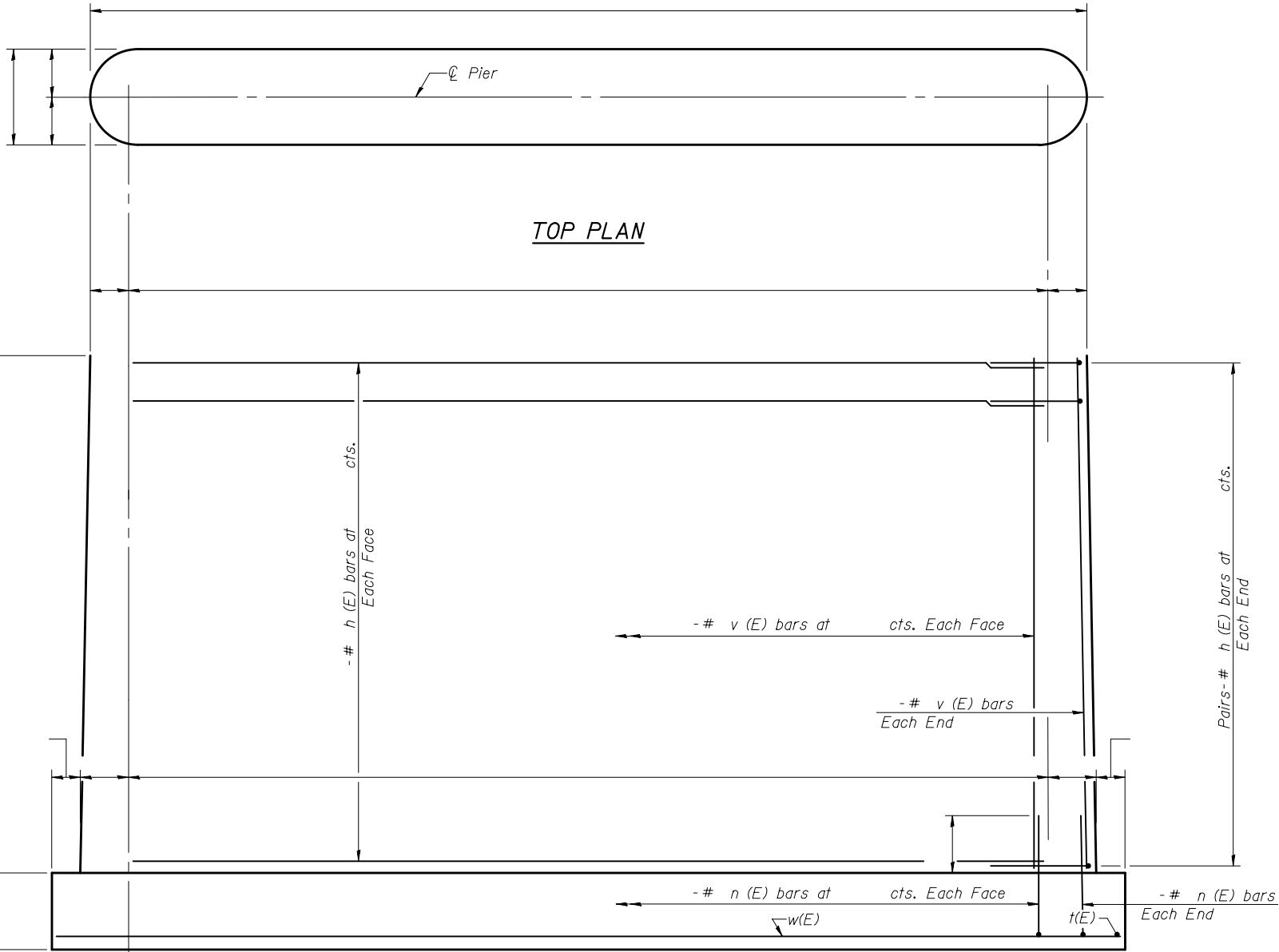
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet - of -.

PILE DATA

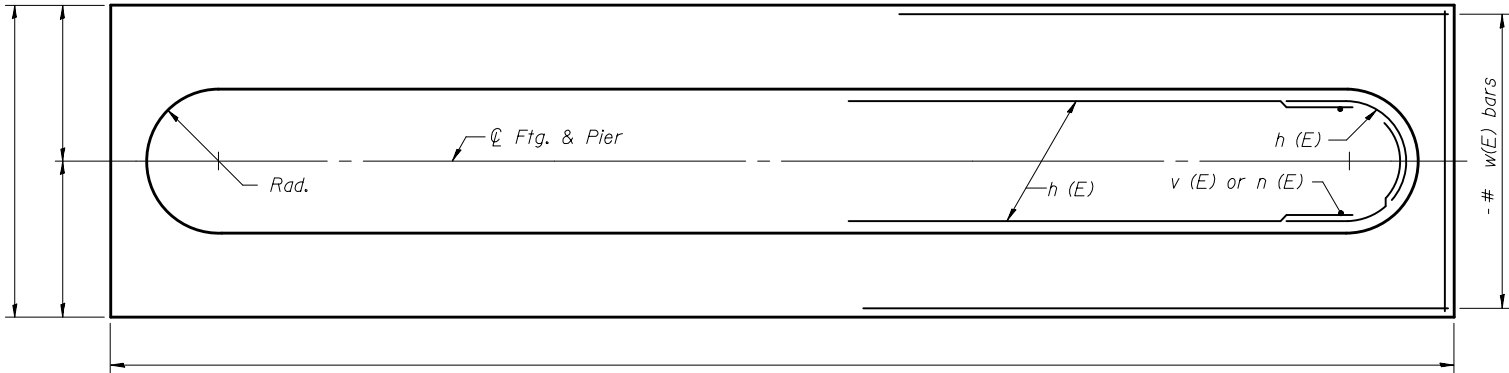
Type:
Nominal Required Bearing:
Factored Resistance Available:
Est. Length:
No. Production Piles:
No. Test Piles:



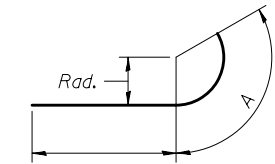
END VIEW



ELEVATION
(Looking)

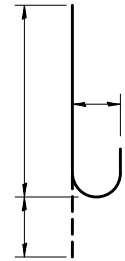


FOOTING PLAN



Bar	Rad.	A
h (E)		
h (E)		

DETAIL OF BARS
h (E)



BAR n (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h (E)		#		—
h (E)		#		—
n (E)		#		—
t (E)		#		—
v (E)		#		—
w (E)		#		—
Structure Excavation			Cu. Yd.	
Concrete Structures			Cu. Yd.	
Reinforcement Bars, Epoxy Coated			Pound	
Furnishing - Piles,			Foot	
Driving Piles			Foot	
Test Pile,			Each	

PB-1

7-1-10

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STATE OF ILLINOIS
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